CDX-L350/L450X/L470X

SERVICE MANUAL

Ver 1.0 2001. 01

US Model
Canadian Model
CDX-L350
AEP Model
CDX-L450X
E Model
CDX-L450X/L470X

Photo: CDX-L470X

• The CD sections have no adjustments.

Model Name Using Similar Mechanism	NEW
CD Drive Mechanism Type	MG-393X-121//K
Optical Pick-up Name	KSS-720A

SPECIFICATIONS

AUDIO POWER SPECIFICATIONS (US Model)

POWER OUTPUT AND TOTAL HARMONIC DISTORTION
23 watts per channel minimum continuous average power into 4 ohms, 4 channels driven from 20 Hz to 20 kHz with no more than 5% total harmonic distortion.

CD player section

Signal-to-noise ratio	90 dB
Frequency response	10 – 20,000 Hz
Wow and flutter	Below measurable limit
Laser Diode Properties (CDX-L350)	
Material	GaAlAs
Wavelength	780 nm
Emission Duration	Continuous
Laser output power	Less than 44.6 µW*

* *This output is the value measured at a distance of 200 mm from the objective lens surface on the Optical Pick-up Block.*

Tuner section

FM

Tuning range	CDX-L350: 87.5 – 107.9 MHz CDX-L450X/L470X: FM tuning interval: 50 kHz/200 kHz switchable 87.5 – 108 MHz (at 50 kHz step) 87.5 – 107.9 MHz (at 200 kHz step)
Antenna terminal	External antenna connector
Intermediate frequency	10.7 MHz
Usable sensitivity	11 dBf
Selectivity	75 dB at 400 kHz
Signal-to-noise ratio	65 dB (stereo), 68 dB (mono)
Harmonic distortion at 1 kHz	0.7% (stereo), 0.5% (mono)
Separation	33 dB at 1 kHz
Frequency response	30 – 15,000 Hz

AM

Tuning range	CDX-L350: 530 – 1,710 kHz CDX-L450X/L470X: AM tuning interval: 9 kHz/10 kHz switchable 531 – 1,602 kHz (at 9 kHz step) 530 – 1,710 kHz (at 10 kHz step)
Antenna terminal	External antenna connector
Intermediate frequency	10.7 MHz/450 kHz
Sensitivity	30 µV

Power amplifier section

Outputs	Speaker outputs (sure seal connectors)
Speaker impedance	4 – 8 ohms
Maximum power output	50 W × 4 (at 4 ohms)

– Continued on next page –

FM/AM COMPACT DISC PLAYER

9-870-257-11
2001A0400-1
© 2001. 1

Sony Corporation
Audio Entertainment Group
General Engineering Dept.

SONY®

General

Outputs	Audio output Power amplifier control lead (CDX-L350) Power antenna relay control lead (CDX-L350) Power aerial relay control lead (CDX-L450X/L470X)
Tone controls	Bass ±10 dB at 20 Hz (CDX-L350) Treble ±10 dB at 20 kHz (CDX-L350) Bass ±9 dB at 100 Hz (L450X/L470X) Treble ±9 dB at 10 kHz (L450X/L470X)
Power requirements	12 V DC car battery (negative ground)
Dimensions	Approx. 178 × 50 × 176 mm (7 1/8 × 2 × 7 in.) (w/h/d)
Mounting dimensions	Approx. 182 × 53 × 161 mm (7 1/4 × 2 1/8 × 6 3/8 in.) (w/h/d)
Mass	Approx. 1.2 kg (2 lb. 10 oz.)
Supplied accessories	Parts for installation and connections (1 set) Front panel case (1) Card remote commander RM-X115 (CDX-L350/L470X)

Note (L450X/L470X)

This unit cannot be connected to a digital preamplifier or an equalizer.

Design and specifications are subject to change without notice.

SERVICE NOTES

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens.

Notes on Chip Component Replacement

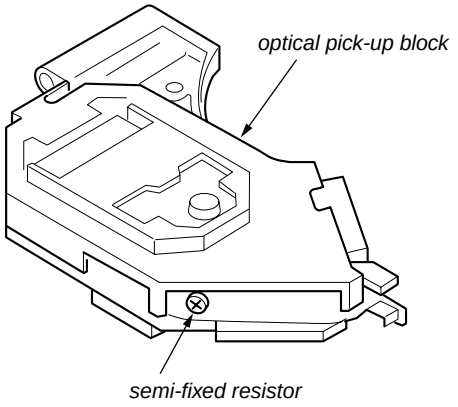
- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

US/Canadian/E model:

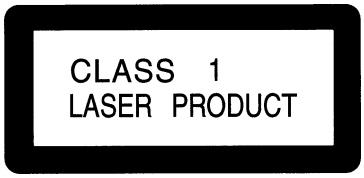
CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

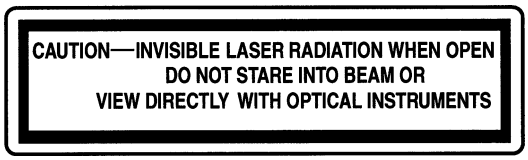
If the optical pick-up block is defective, please replace the whole optical pick-up block.
Never turn the semi-fixed resistor located at the side of optical pick-up block.



AEP model:



This product is classified as a CLASS 1 LASER PRODUCT.
This label is located on the bottom of the chassis.



This label is located on the drive unit's internal chassis.

When replacing the chassis (T) of mechanism deck which have the “CAUTION LABEL” attached, please be sure to put a new CAUTION LABEL (3-223-913-11) to the chassis (T).

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

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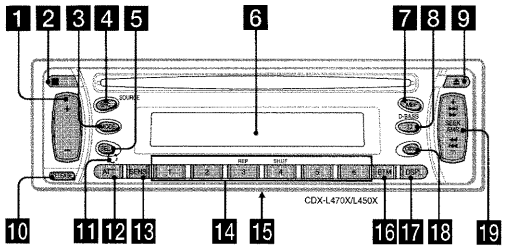
SECTION 1
GENERAL

This section is extracted from instruction manual.

Location of controls

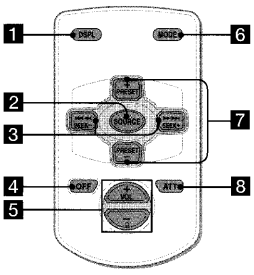
Refer to the pages listed for details.
CD : During Playback RADIO : During radio reception



1 **Volume +/– button 9, 13**
2 **Receptor for the card remote commander**
3 **MODE button**
RADIO **11, 12**
4 **SRC (SOURCE) (TUNER/CD) button 9, 11, 12**
5 **SEL (select) button 9, 13, 14**
6 **Display window**
7 **MBP (My Best sound Position) button 14**
8 **D (D-BASS) button 14**
9 **⏏ (eject) button 9**
10 **RELEASE (front panel release) button 8**
11 **RESET button** (located on the front side of the unit, behind the front panel) **7**
12 **ATT (attenuate) button 13**
13 **SENS button 12**
14 **Number buttons**
CD
③ **REP 10**
④ **SHUF 10**
RADIO **11, 12, 13**
15 **Frequency select switch (located on the bottom of the unit)**
See "Frequency select switch" in the Installation/Connections manual.
16 **BTM (Best Tuning Memory) button 11**
17 **DSPL (display mode change) button 9, 10, 11,**
18 **OFF button* 8, 9**
19 **SEEK/AMS +/– button**
CD **9**
RADIO **12**

* **Warning when installing in a car without an ACC (accessory) position on the ignition key switch**
Be sure to press (OFF) on the unit for 2 seconds to turn off the clock display after turning off the engine.
Otherwise, the clock display does not turn off and this causes battery drain.

Card remote commander RM-X115 *(supplied with CDX-L470X only)*



The corresponding buttons of the card remote commander control the same functions as those on this unit.

1 **DSPL button**
2 **SOURCE button**
3 **SEEK (⬅/➡) buttons**
4 **OFF button**
5 **VOL (+/–) buttons**
6 **MODE button**
7 **PRESET (+/–) buttons**
8 **ATT button**

Note
If the unit is turned off by pressing (OFF) for 2 seconds, it cannot be operated with the card remote commander unless (SRC) on the unit is pressed, or a disc is inserted to activate the unit first.

Tip
Refer to "Replacing the lithium battery" for details on how to replace the batteries (page 15).

Precautions

- If your car was parked in direct sunlight, allow the unit to cool off before operating it.
- Power aerials will extend automatically while the unit is operating.

If you have any questions or problems concerning your unit that are not covered in this manual, please consult your nearest Sony dealer.

Moisture condensation

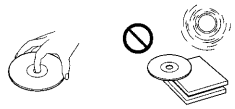
On a rainy day or in a very damp area, moisture condensation may occur inside the lenses and display of the unit. Should this occur, the unit will not operate properly. In such a case, remove the disc and wait for about an hour until the moisture has evaporated.

To maintain high sound quality

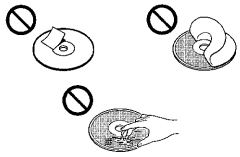
Be careful not to splash juice or other soft drinks onto the unit or discs.

Notes on discs

- To keep the disc clean, do not touch the surface. Handle the disc by its edge.
- Keep your discs in their cases or disc magazines when not in use. Do not subject the discs to heat/high temperature. Avoid leaving them in parked cars or on dashboards/rear trays.



- Do not attach labels, or use discs with sticky ink/residue. Such discs may stop spinning when used, causing a malfunction, or may ruin the disc.



- Discs with special shapes (heart-shaped discs, octagonal discs, etc.) cannot be played on this unit. Attempting to do so may damage the unit. Do not use such discs.
- You cannot play 8 cm CDs.
- Before playing, clean the discs with a commercially available cleaning cloth. Wipe each disc from the centre out. Do not use solvents such as benzine, thinner, commercially available cleaners, or antistatic spray intended for analog discs.

Notes on CD-R discs

- You can play CD-Rs (recordable CDs) designed for audio use on this unit. Look for this mark to distinguish CD-Rs for audio use.

This mark denotes that a disc is not for audio use.

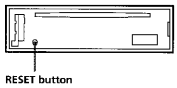
- Some CD-Rs (depending on the equipment used for its recording or the condition of the disc) may not play on this unit.
- You cannot play a CD-R that is not finalized*.

* *A process necessary for a recorded CD-R disc to be played on the audio CD player.*

Getting Started

Resetting the unit

Before operating the unit for the first time or after replacing the car battery, you must reset the unit.
Remove the front panel and press the RESET button with a pointed object, such as a ballpoint pen.



Note
Pressing the RESET button will erase the clock setting and some stored contents.

Detaching the front panel

You can detach the front panel of this unit to protect the unit from being stolen.

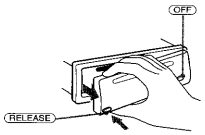
Caution alarm

If you turn the ignition switch to the OFF position without removing the front panel, the caution alarm will beep for a few seconds.

1 **Press (OFF)*.**
CD playback or radio reception stops (the key illumination and display remain on).

** If your car has no ACC position on the ignition switch, be sure to turn the unit off by pressing (OFF) for 2 seconds to avoid car battery drain.*

2 **Press (RELEASE), then pull it off towards you.**

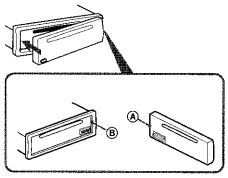


Notes
- *If you detach the panel while the unit is still turned on, the power will turn off automatically to prevent the speakers from being damaged.*
- *Do not drop or put excessive pressure on the front panel and its display window.*
- *Do not subject the front panel to heat/high temperature or moisture. Avoid leaving it in parked cars or on dashboards/rear trays.*

Tip
When carrying the front panel with you, use the supplied front panel case.

Attaching the front panel

Attach part Ⓐ of the front panel to part Ⓑ of the unit as illustrated and push the left side into position until it clicks.



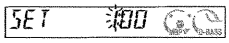
Note
Do not put anything on the inner surface of the front panel.

Setting the clock

The clock uses a 12-hour digital indication.

Example: To set the clock to 10:08

1 **Press (DSPL) for 2 seconds.**
The hour indication flashes.



❶ Press either side of the volume +/– button to set the hour.

❷ Press (SEL).
The minute indication flashes.

❸ Press either side of the volume +/– button to set the minute.

2 **Press (DSPL).**

The clock starts. After the clock setting is completed, the display returns to normal play mode.

CD Player

Playing a disc

Insert the disc (labelled side up).

Playback starts automatically.

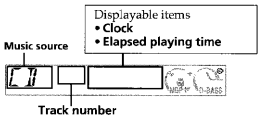
If a disc is already inserted, press (SRC) repeatedly until "CD" appears to start playback.

To	Press
Stop playback	⏏ or (OFF)
Eject the disc	⏏
Skip tracks – Automatic Music Sensor	(SEEK/AMS) (I◀◀ / ▶▶I) [once for each track]
Fast-forward/ reverse – Manual Search	(SEEK/AMS) (◀◀ / ▶▶) [hold to desired point]

Note
When the last track on the disc is over, playback restarts from the first track of the disc.

Display items

When the disc/track changes, any prerecorded data of the new disc/track is automatically displayed.



To	Press
Switch display item	(DSPL)

Playing tracks repeatedly

— Repeat Play

The current track will repeat itself when it reaches the end.

During playback, press (3) (REP) until "REP" indicator appears in the display.
Repeat Play starts.

To return to normal play mode, press (3) (REP) again.

Playing tracks in random order — Shuffle Play

You can select to play the tracks on the current disc in random order.

During playback, press (4) (SHUF) until "SHUF" indicator appears in the display.
Shuffle Play starts.

To return to normal play mode, press (4) (SHUF) again.

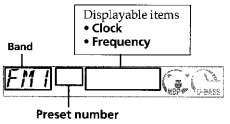
Radio

The unit can store up to 6 stations per band (FM1, FM2, FM3, AM1, and AM2).

Caution
When tuning in stations while driving, use Best Tuning Memory to prevent accidents.

Display items

The following items can be displayed.



To	Press
Switch display item	(DSPL)

Storing stations automatically

— Best Tuning Memory (BTM)

The unit selects the stations with the strongest signals within the selected band, and stores them in the order of their frequency.

1 **Press (SRC) repeatedly to select the radio.**

2 **Press (MODE) repeatedly to select the band.**

3 **Press (BTM) for 2 seconds.**
The unit stores stations in the order of their frequencies on the number buttons. A beep sounds when the setting is stored.

Notes
- *If only a few stations can be received due to weak signals, some number buttons will retain their former settings.*
- *When a number is indicated in the display, the unit starts storing stations from the one currently displayed.*

Receiving the stored stations

1 Press (SRC) repeatedly to select the radio.

2 Press (MODE) repeatedly to select the band.

3 Press the number button (1 to 6) on which the desired station is stored.

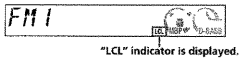
If preset tuning does not work
— Automatic tuning/ Local Seek Mode

Automatic tuning:

Press either side of (SEEK/AMS) to search for the station.
Scanning stops when the unit receives a station. Press either side of (SEEK/AMS) repeatedly until the desired station is received.

Local Seek Mode:

If the automatic tuning stops too frequently, press (SENS) repeatedly until "LCL" indicator appears.



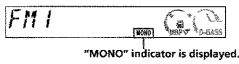
"LCL" indicator is displayed.

Only the stations with relatively strong signals will be tuned in.

Tip
If you know the frequency of the station you want to listen to, press either side of (SEEK/AMS) until the desired frequency appears (manual tuning).

If FM stereo reception is poor
— Monaural Mode

During radio reception, press (SENS) repeatedly until "MONO" indicator appears.



"MONO" indicator is displayed.

The sound improves, but becomes monaural ("ST" disappears).

To return to normal, press (SENS) again.

Storing only the desired stations

You can manually preset the desired stations on any chosen number button.

1 Press (SRC) repeatedly to select the radio.

2 Press (MODE) repeatedly to select the band.

3 Press either side of (SEEK/AMS) to tune in the station that you want to store.

4 Press the desired number button (1 to 6) until "MEM" appears.
The number button indication appears in the display.

Note
If you try to store another station on the same number button, the previously stored station will be erased.

Other Functions

Adjusting the sound characteristics

You can adjust the bass, treble, balance, and fader.
The bass and treble levels can be stored independently for each source.

1 Select the item you want to adjust by pressing (SEL) repeatedly.
Each time you press (SEL), the item changes as follows:

BAS (bass) → TRE (treble) →
BAL (left-right) → FAD (front-rear)

2 Adjust the selected item by pressing either side of the volume +/– button.

Note
Adjust within 3 seconds after selecting the item.

Quickly attenuating the sound

Press (ATT).
"ATT" appears in the display.

To restore the previous volume level, press (ATT) again.

Canceling the beep sound

Press 6 while pressing (SEL) down.

To activate the beep sound again, press these buttons again.

Note
If you connect an optional power amplifier and do not use the built-in amplifier, the beep sound will be deactivated.

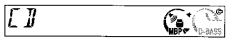
Selecting the sound position

— My Best sound Position (MBP)

When you drive without passengers, you can enjoy the most comfortable sound environment with "My Best sound Position." "My Best sound Position" has two presets, which adjust the sound level of balance and fader. You can select one very easily with the MBP button.

Display window	Balance Level		Fader Level	
	Right	Left	Front	Rear
MBP-A	– 4dB	0	0	– 4dB
MBP-B	0	– 4dB	0	– 4dB
MBP-OFF	0	0	0	0

Press (MBP) repeatedly for the desired listening position.
The mode of "My Best sound Position" is shown in the display in order of the table.



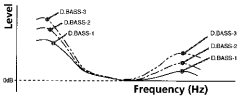
If you want to adjust the sound level of balance and fader more precisely, you can do it using the (SEL) button. (page 13)

Notes
- *When the BAL (balance) or FAD (fader) in "Adjusting the sound characteristics" (page 13) is adjusted, the MBP setting returns OFF.*
- *When MBP is set to OFF, the BAL and FAD setting is activated.*

Boosting the bass sound

— D-bass

You can enjoy a clear and powerful bass sound. The D-bass function boosts the low frequency signal and high frequency signal with a sharper curve than conventional bass boost.
You can hear the bass line more clearly even while the vocal volume remains the same. You can emphasize and adjust the bass sound easily with the (D) D-BASS button.

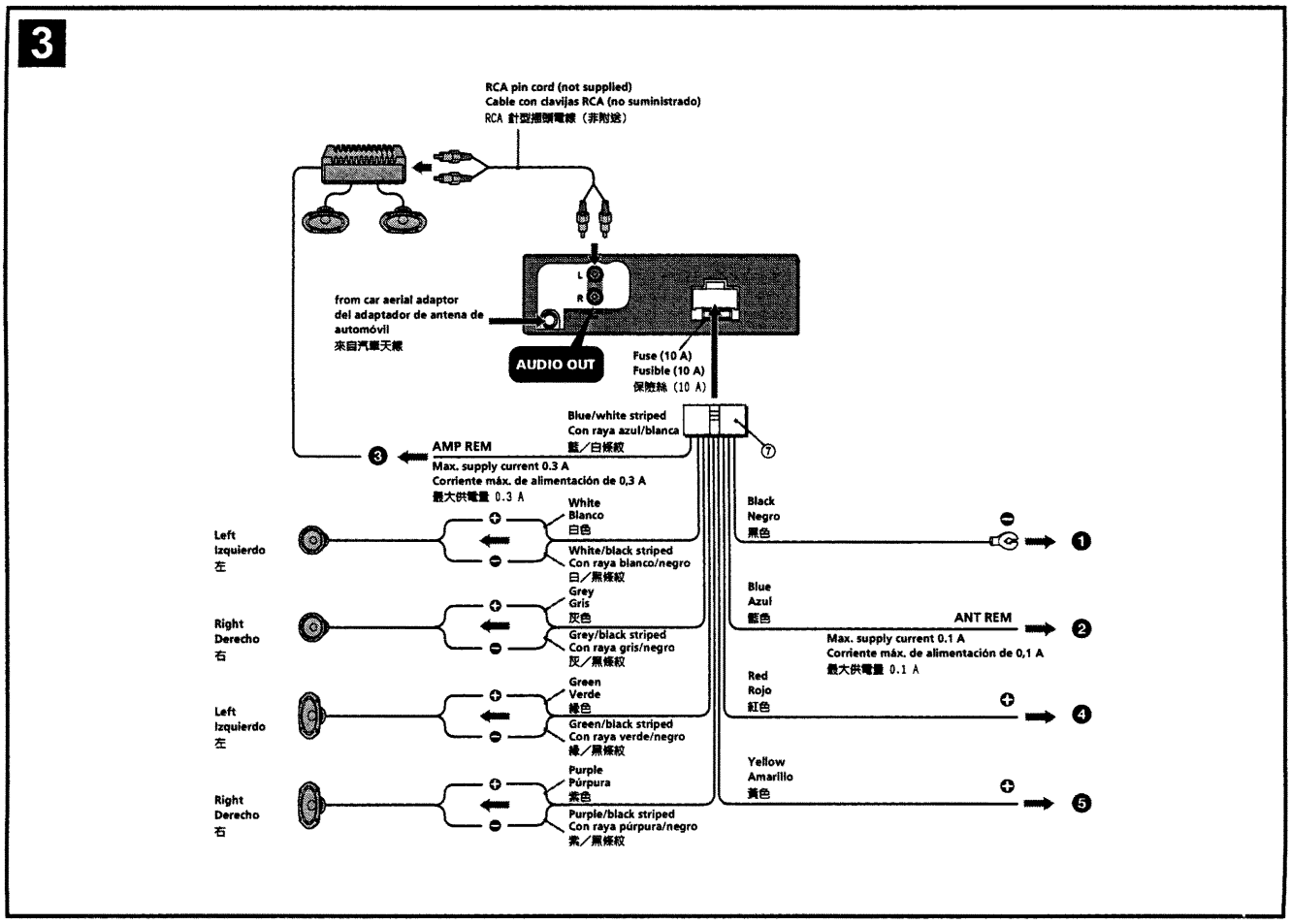


Adjusting the bass curve

Press (D) (D-BASS) repeatedly to select the desired bass curve.
As the D-BASS number increases so does the effect.

Note
The bass sound may distort at same volume. If the bass sound distorts, select less effective bass curve.

Connections



Connection diagram (3)

❶ **To a metal surface of the car**
First connect the black earth lead, then connect the yellow and red power input leads.

❷ **To the power aerial control lead or power supply lead of aerial booster amplifier**
Notes
- *It is not necessary to connect this lead if there is no power aerial or aerial booster, or with a manually-operated telescopic aerial.*
- *When your car has a built-in FM/AM aerial in the rear/side glass, see "Notes on the control and power supply leads."*

❸ **To AMP REMOTE IN of an optional power amplifier**
This connection is only for amplifiers. Connecting any other system may damage the unit.

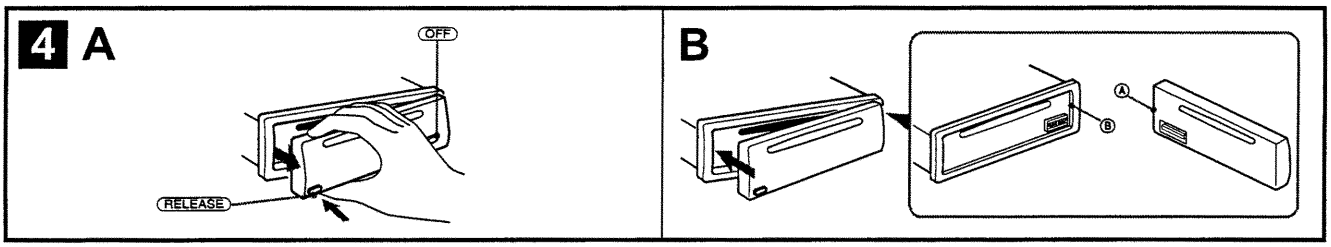
❹ **To the +12 V power terminal which is energised in the accessory position of the ignition key switch**
Notes
- *If there is no accessory position, connect to the +12 V power (battery) terminal which is energised at all times. Be sure to connect the black earth to it first.*
- *When your car has a built-in FM/AM aerial in the rear/side glass, see "Notes on the control and power supply leads."*

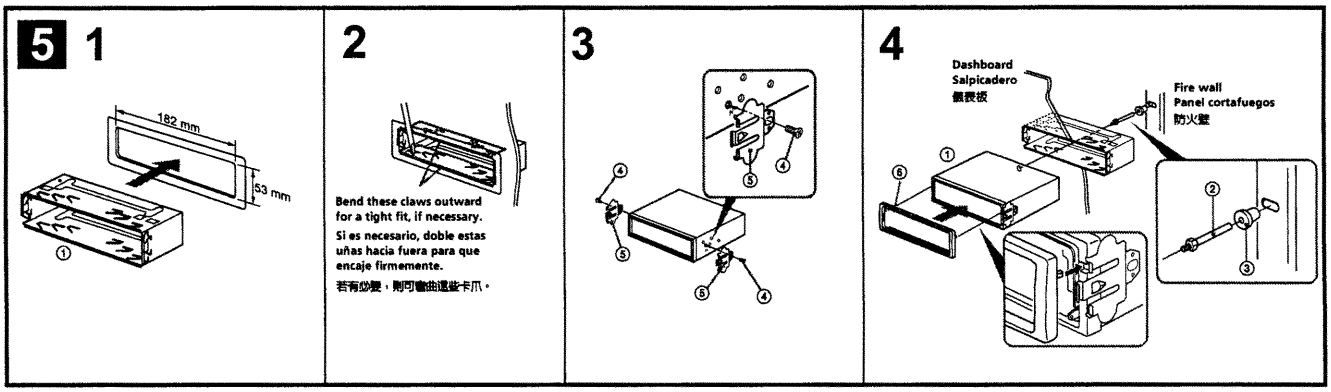
❺ **To the +12 V power terminal which is energised at all times**
Be sure to connect the black earth to it first.

Notes on the control and power supply leads
- *The power aerial control lead (blue) supplies +12 V DC when you turn on the tuner.*
- *When your car has built-in FM/AM aerial in the rear/side glass, connect the power aerial control lead (blue) or the accessory power input lead (red) to the power terminal of the existing aerial booster. For details, consult your dealer.*
- *A power aerial without relay box cannot be used with this unit.*

Memory hold connection
When the yellow power input lead is connected, power will always be supplied to the memory circuit even when the ignition key is turned off.

Notes on speaker connection
- *Before connecting the speakers, turn the unit off.*
- *Use speakers with an impedance of 4 to 8 ohms, and with adequate power handling capacities to avoid its damage.*
- *Do not connect the speaker terminals to the car chassis, or connect the terminals of the right speakers with those of the left speaker.*
- *Do not connect the ground lead of this unit to the negative (-) terminal of the speaker.*
- *Do not attempt to connect the speakers in parallel.*
- *Connect only passive speakers. Connecting active speakers (with built-in amplifiers) to the speaker terminals may damage the unit.*





Precautions

- Choose the installation location carefully so that the unit will not interfere with normal driving operations.
- Avoid installing the unit in areas subject to dust, dirt, excessive vibration, or high temperatures, such as in direct sunlight or near heater ducts.
- Use only the supplied mounting hardware for a safe and secure installation.

Mounting angle adjustment

Adjust the mounting angle to less than 60°.

How to detach and attach the front panel (4)

Before installing the unit, detach the front panel.

4-A To detach

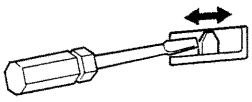
Before detaching the front panel, be sure to press (OFF). Press (RELEASE), then pull out the left side.

4-B To attach

Attach part Ⓐ of the front panel to part Ⓑ of the unit as illustrated and push the left side into position until it clicks.

Frequency select switch

The AM (FM) tuning interval is factory-set to the 10 k (200 k) position. If the frequency allocation system of your country is based on 9 kHz (50 kHz) interval, set the switch on the bottom of the unit to the 9 k (50 k) position before making connections.



Mounting example (5)

Installation in the dashboard

Mounting the unit in a Japanese car (6)

You may not be able to install this unit in some makes of Japanese cars. In such a case, consult your Sony dealer.

Note

To prevent malfunction, install only with the supplied screws ④.

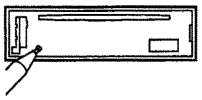
Warning when installing in a car without ACC (accessory) position on the ignition key switch

Be sure to press (OFF) on the unit for two seconds to turn off the clock display after turning off the engine.

When you press (OFF) only momentarily, the clock display does not turn off and this causes battery wear.

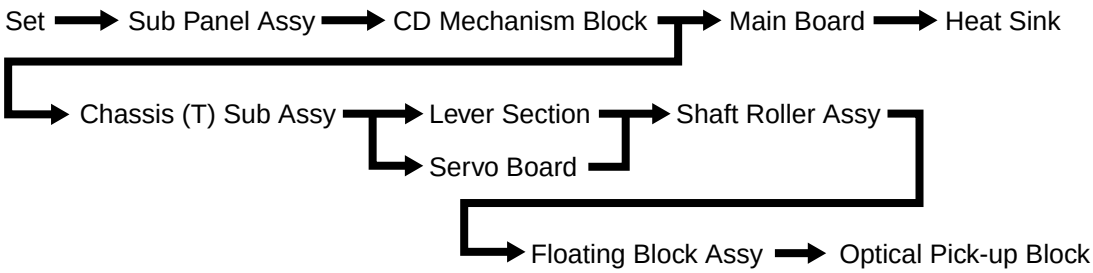
RESET button

When the installation and connections are completed, be sure to press the RESET button with a ballpoint pen, etc.



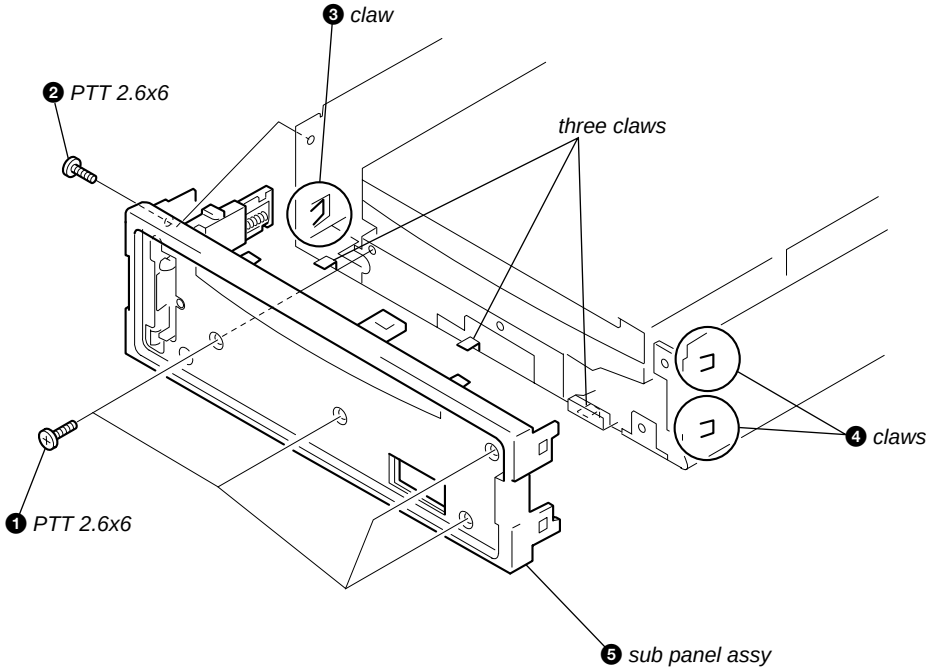
SECTION 2
DISASSEMBLY

Note : This set can be disassemble according to the following sequence.

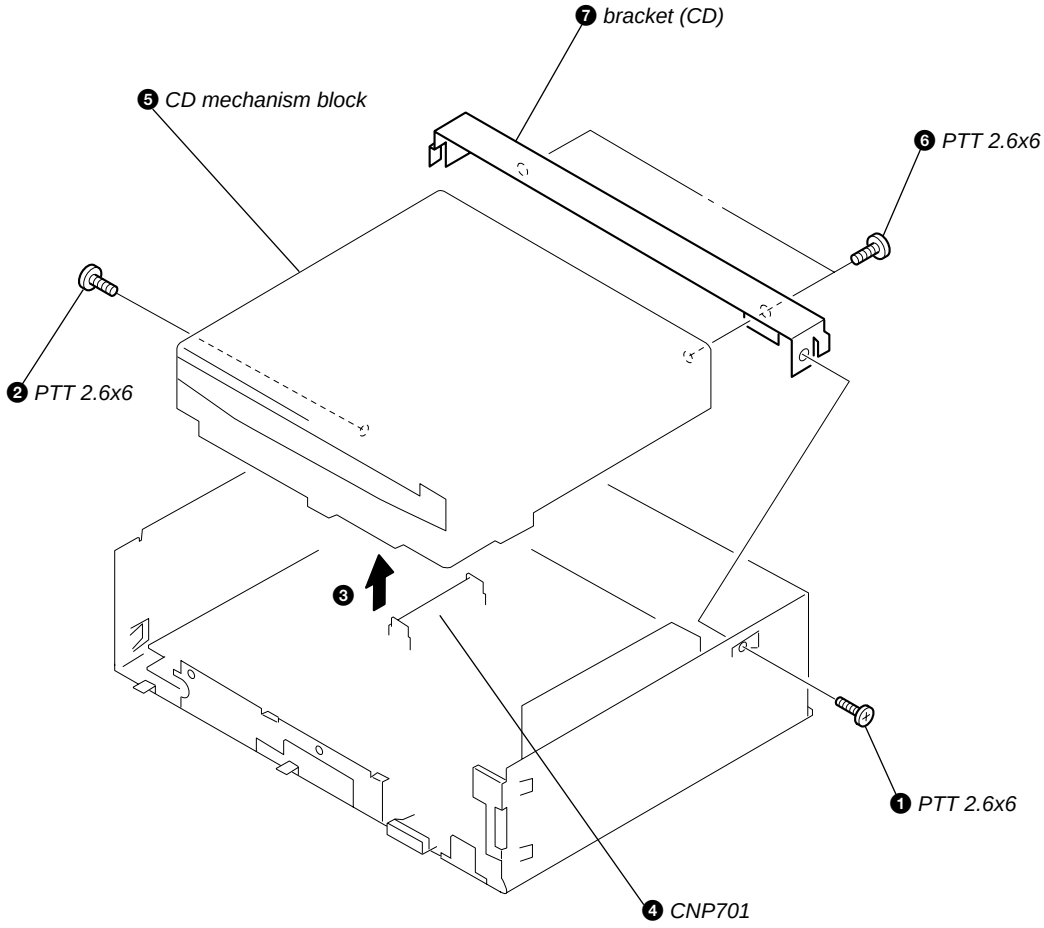


Note : Follow the disassembly procedure in the numerical order given.

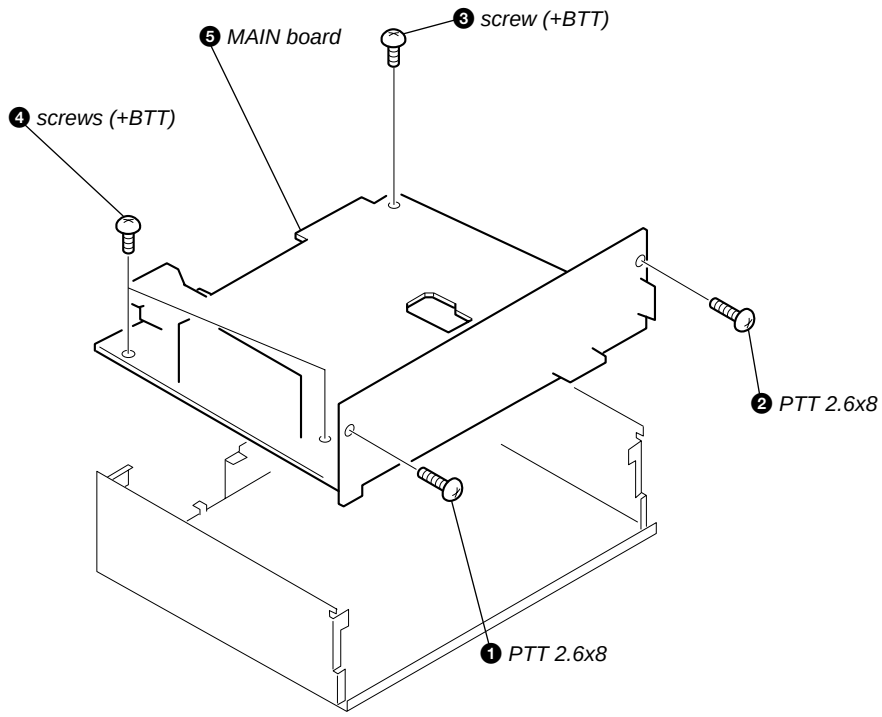
2-1. SUB PANEL ASSY



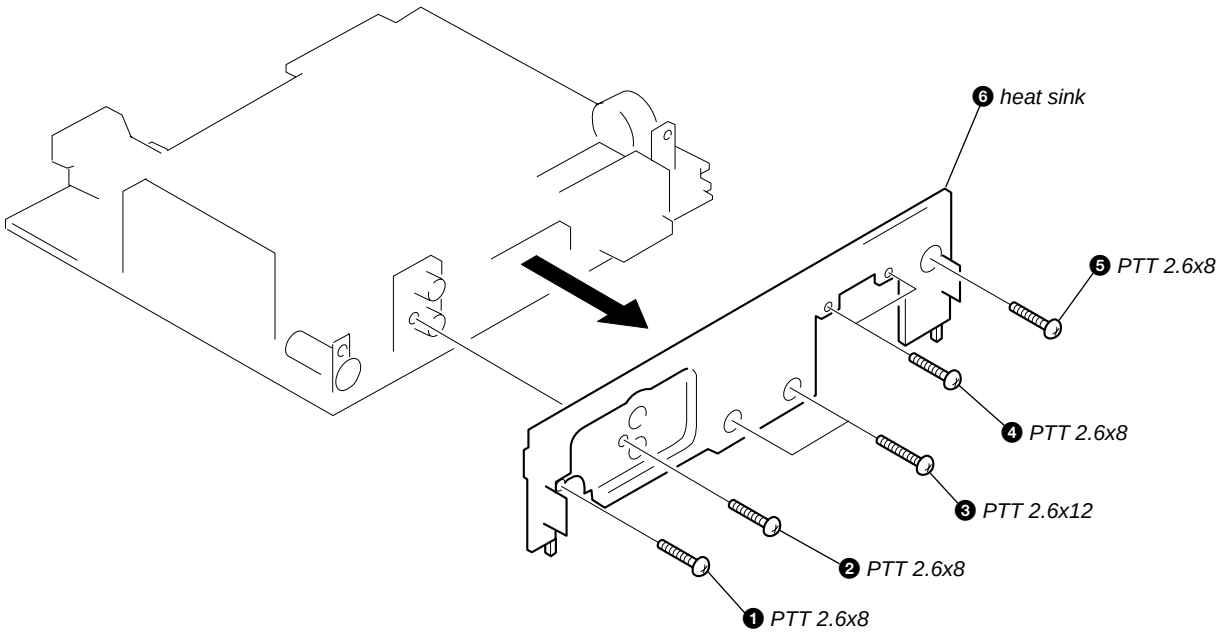
2-2. CD MECHANISM BLOCK



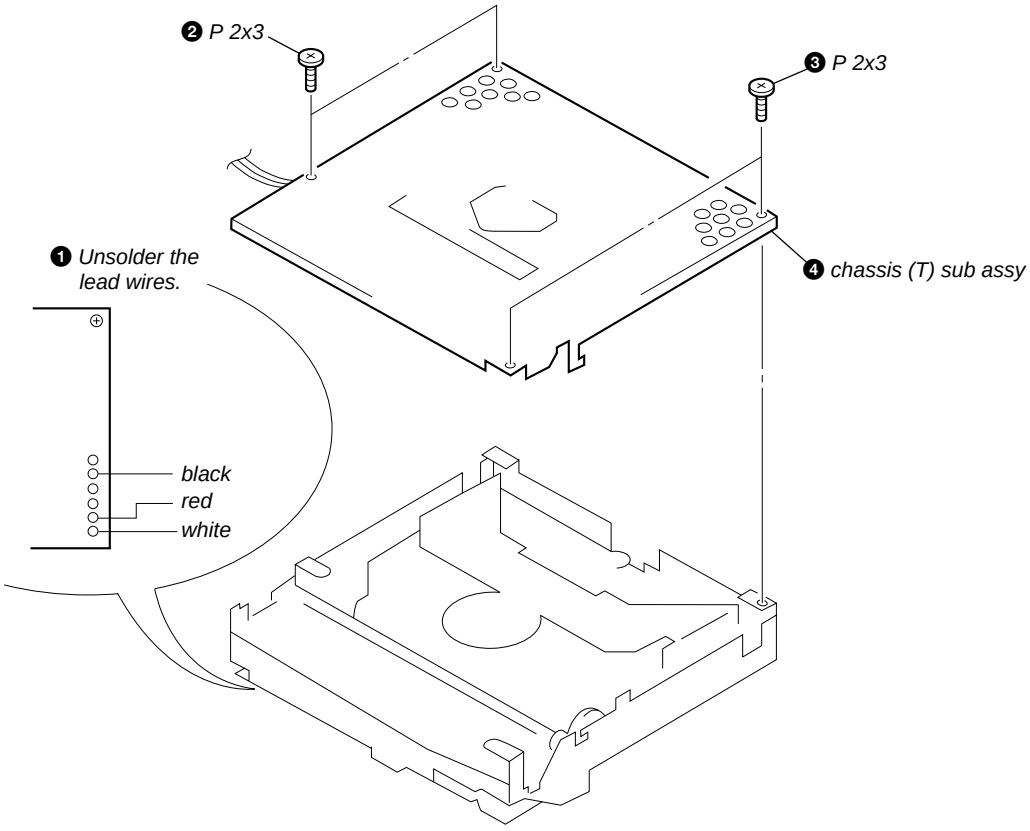
2-3. MAIN BOARD



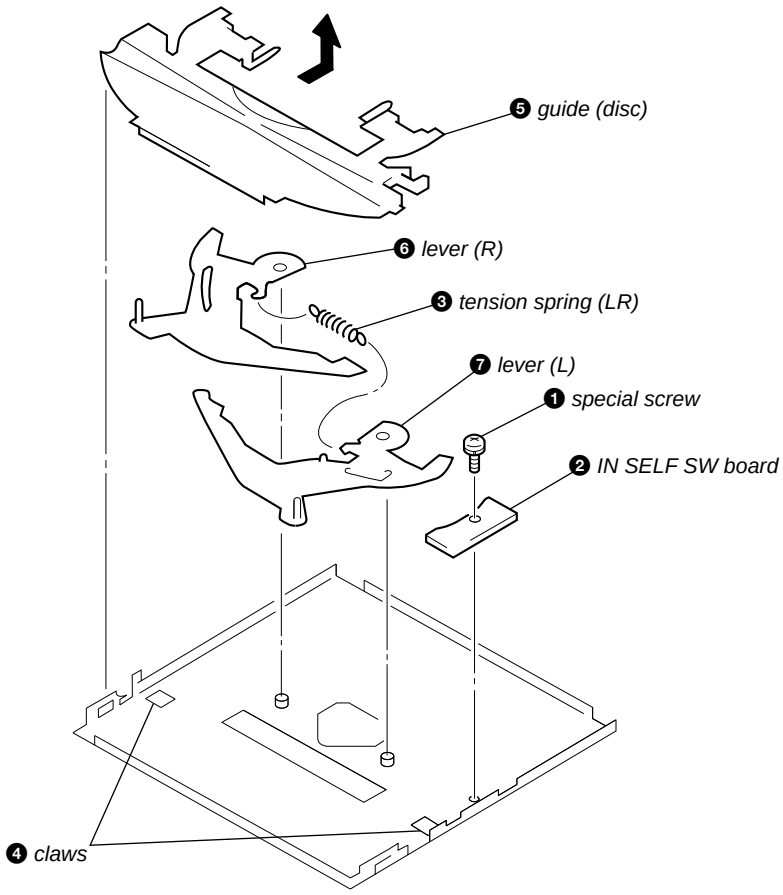
2-4. HEAT SINK



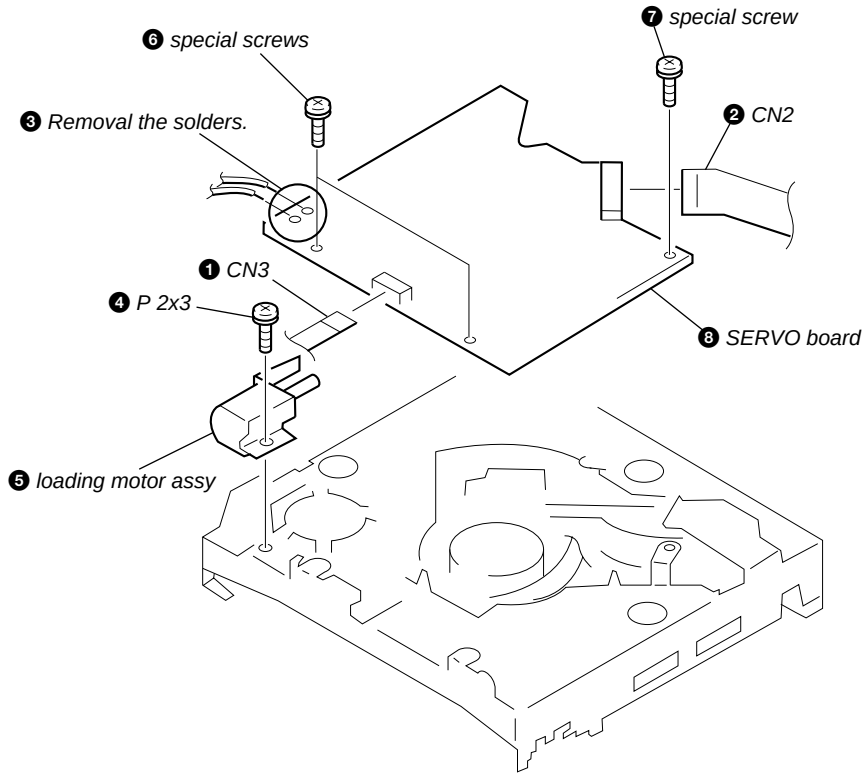
2-5. CHASSIS (T) SUB ASSY



2-6. LEVER SECTION



2-7. SERVO BOARD



2-8. SHAFT ROLLER ASSY

• When installing, take note of the positions arm (roller) and washers. (Fig. 1)

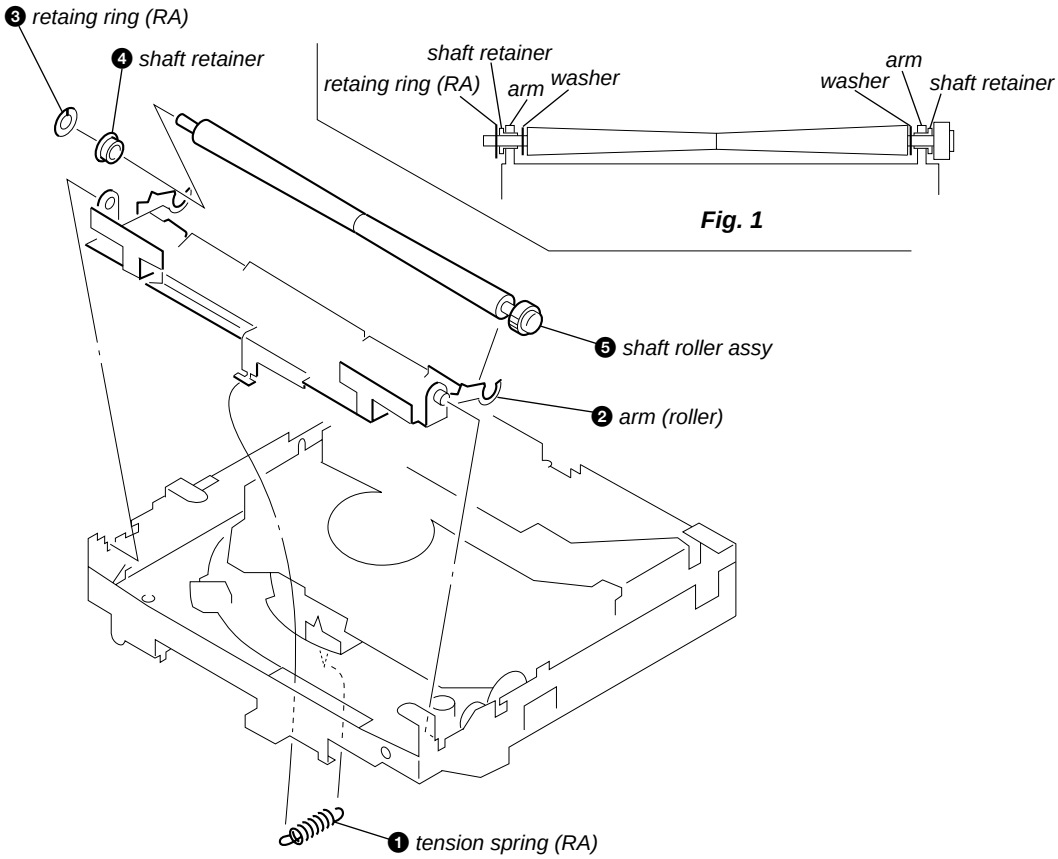
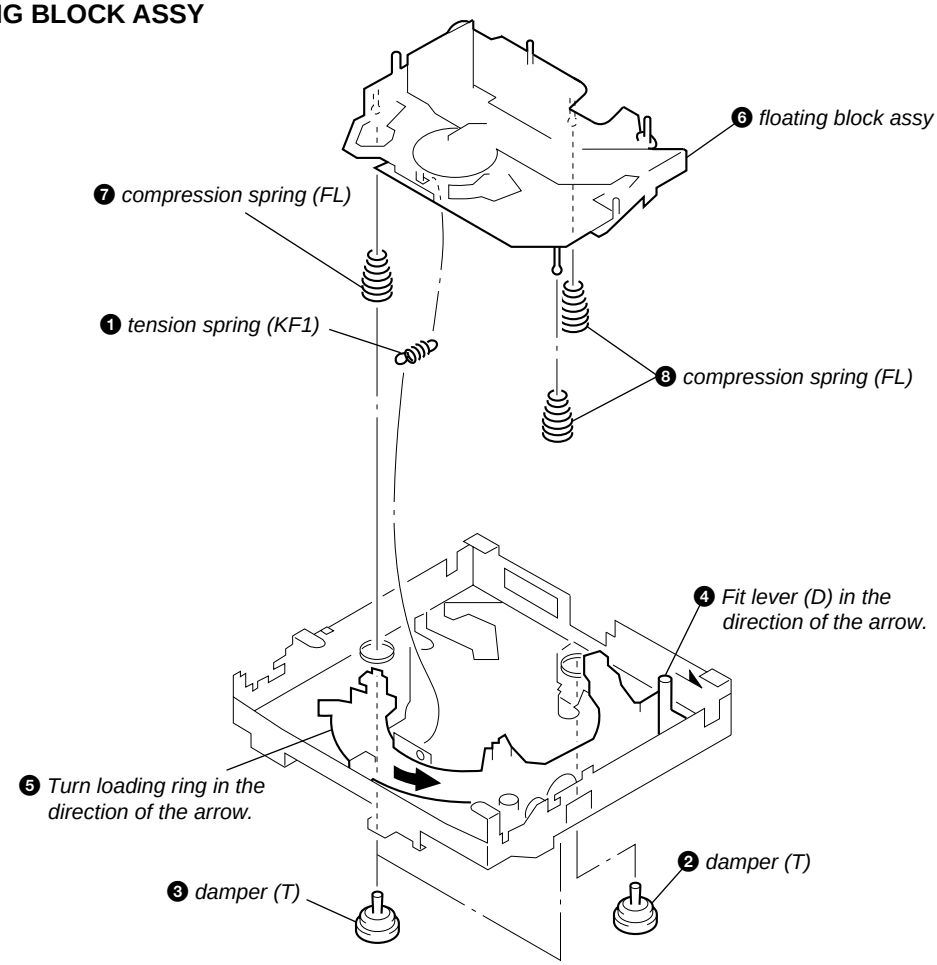
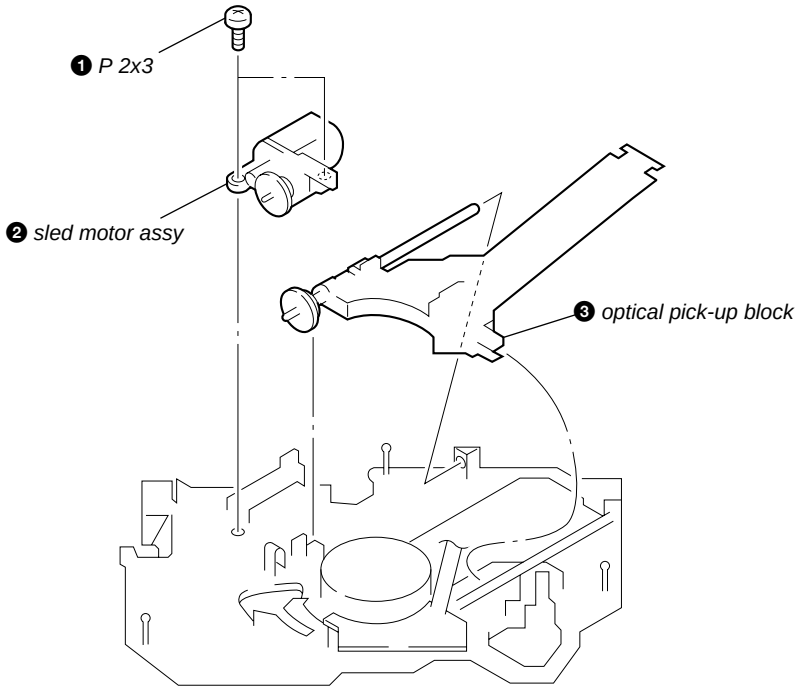


Fig. 1

2-9. FLOATING BLOCK ASSY


❻ floating block assy
❼ compression spring (FL)
❶ tension spring (KF1)
❽ compression spring (FL)
❹ Fit lever (D) in the direction of the arrow.
❺ Turn loading ring in the direction of the arrow.
❷ damper (T)
❸ damper (T)

2-10. OPTICAL PICK-UP BLOCK



SECTION 3
ELECTRICAL ADJUSTMENTS

TEST MODE

This set have the test mode function. In the test mode, FM Auto Scan/Stop Level and AM Auto Scan/Stop Level check can be performed easier than it in ordinary procedure.

<Set the Test Mode>
1. Turn ON the regulated power supply to ACC and BATT terminals is "OFF" position (display 1:00).
2. Push the preset [4] button.
3. Push the preset [5] button.
4. Press the preset [1] button for more than two seconds.
5. Then the display and LED on the front panel indicates all lights, the test mode is set.

<Release the Test Mode>
1. Push the [OFF] button.

TUNER SECTION 0 dB = 1 µV

Cautions during repair
When the tuner unit is defective, replace it by a new one because its internal block is difficult to repair.

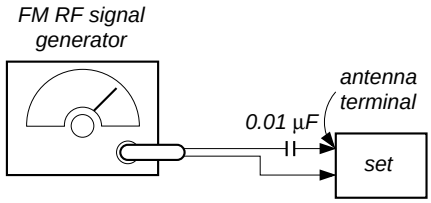
Note on Adjustment

The adjustments of tuner section, should be performed according to the following sequence.
1. FM Auto Scan/Stop Level Adjustment
2. FM Stereo Separation Adjustment
3. AM Auto Scan/Stop Level Adjustment

FM Auto Scan/Stop Level Adjustment

Setting :

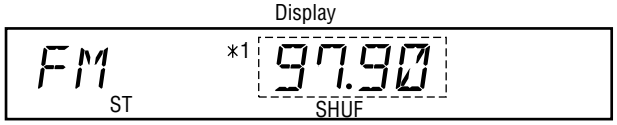
SOURCE button : FM
FREQUENCY SELECT switch (L450X/L470X) : FM 50k



Carrier frequency : 97.9 MHz (L350)
: 98.0 MHz (L450X/L470X)
Output level : 22 dB (12.6 µV)
Mode : mono
Modulation : 1 kHz, 22.5 kHz deviation (30%)

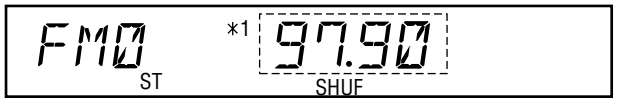
Procedure :
1. Set to the test mode.
2. Push the [SRC] button and set to FM.

Display



3. Adjust with the volume RV2 on TU601 so that the "FM" indication turns to "FM0" indication on the display window. But, in case of already indicated "FM0", turn the RV2 so that put out light "0" indication and adjustment.

Display



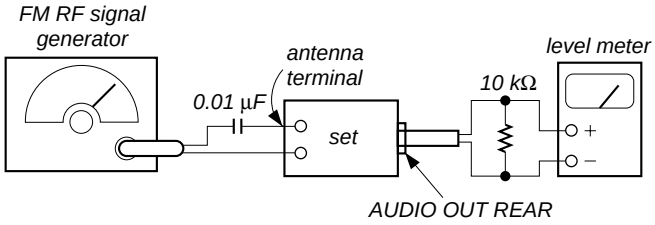
*1: L450X/L470X are indicates "98.00".

Adjustment Location : See page 16.

FM Stereo Separation Adjustment

Setting :

SOURCE button : FM
FREQUENCY SELECT switch (L450X/L470X) : FM 50k



Carrier frequency : 97.9 MHz (L350)
: 98.0 MHz (L450X/L470X)
Output level : 70 dB (3.2 mV)
Mode : stereo
Modulation : main :1 kHz, 33.75 kHz deviation (45%)
sub :1 kHz, 33.75 kHz deviation (45%)
19 kHz pilot : 7.5 kHz deviation (10%)

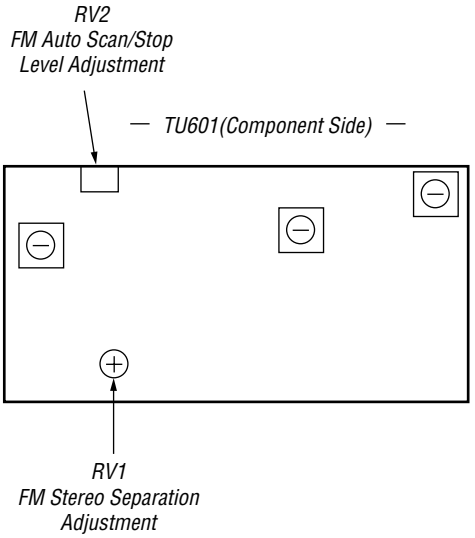
Procedure :

FM stereo signal generator output channel	Level meter connection	Level meter reading (dB)
L-CH	L-CH	Ⓐ
R-CH	L-CH	Ⓑ Adjust RV1 on TU601 for maximum reading.
R-CH	R-CH	Ⓒ
L-CH	R-CH	Ⓓ Adjust RV1 on TU601 for maximum reading.

L-CH stereo separation : Ⓐ – Ⓑ
R-CH stereo separation : Ⓒ – Ⓓ
The separations of both channels should be equal.

Specification : Separation more than 24 dB

Adjustment Location :

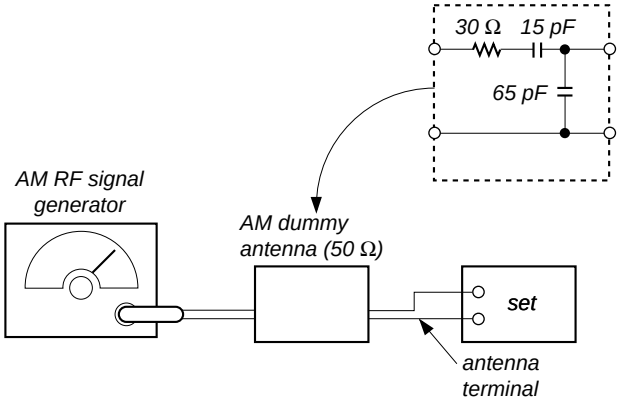


AM Auto Scan/Stop Level Check

Note : This adjustment should be performed after the FM Auto Scan / Stop Level Adjustment is done.

Setting :

SOURCE → MODE button : AM
FREQUENCY SELECT switch (L450X/L470X) : AM 9k

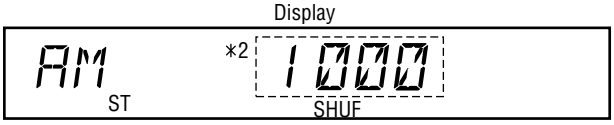


Carrier frequency : 1000 kHz (L350)
: 999 kHz (L450X/L470X)
Output level : 30 dB (44.7 µV)
Mode : mono
Modulation : 1 kHz, 22.5 kHz deviation (30%)

Procedure :

1. Set to the test mode. (See page 15)
2. Push the SRC button.
3. Push the MODE button and set to AM.

Display



4. Check that the “AM” indication turns to “AM0” indication on the display window.

Display

*2: L450X/L470X are indicates “999”.

SECTION 4
DIAGRAMS

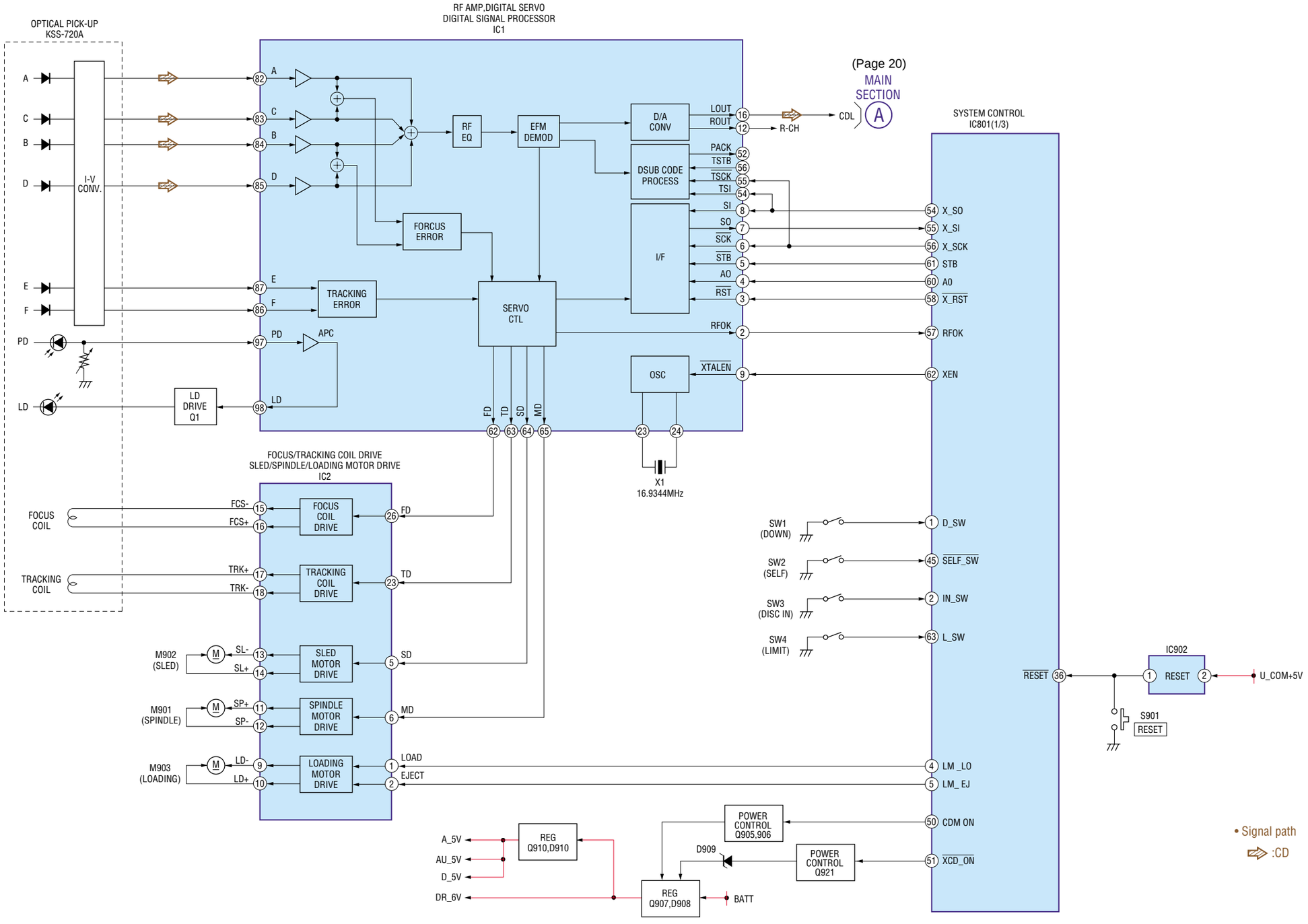
4-1. IC PIN DESCRIPTION

• IC801 µPD780024AGK-B26-9ET (SYSTEM CONTROLLER)

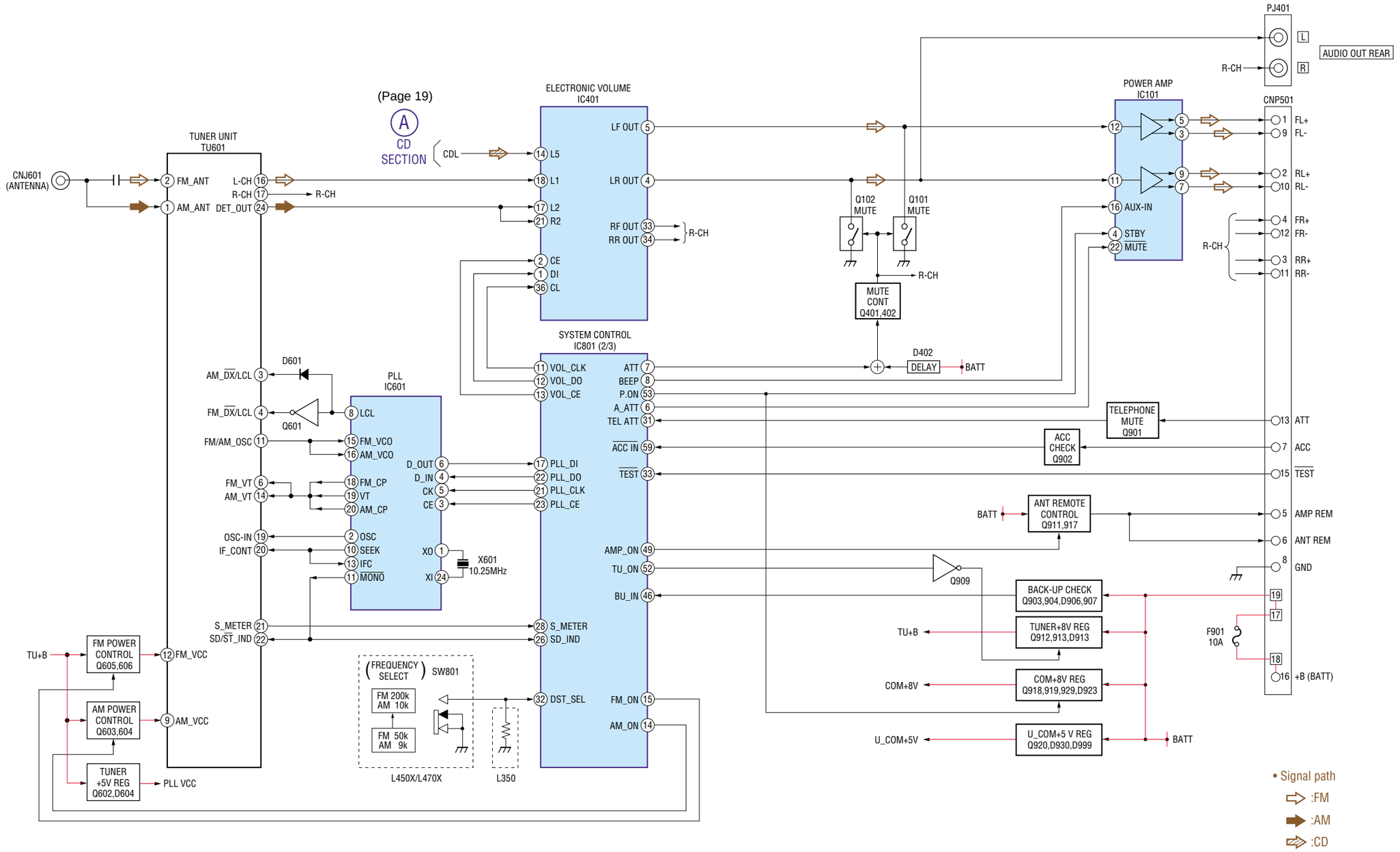
Pin No.	Pin Name	I/O	Pin Description
1	D SW	I	Down switch detection input
2	IN SW	I	Disc in switch detection input
3	PH3	I	PH3 detection input (Not used in this set)
4	LM LD	O	Loading motor drive output (Loading)
5	LM EJ	O	Loading motor drive output (Eject)
6	A ATT	O	Power amplifier mute control output
7	ATT	O	Line out mute control output
8	BEEP	O	BEEP output
9	VSSO	—	Ground
10	VDDO	—	Power supply pin (+5 V)
11	VOL CLK	O	Electric volume clock output
12	VOL DO	O	Electric volume data out output
13	VOL CE	O	Electric volume chip enable output
14	AM ON	O	Tuner AM power supply control output
15	FM ON	O	Tuner FM power supply control output
16	$\overline{\text{NOSE}}$	I	Front panel attachment detection input
17	PLL DI	I	PLL IC data input
18	LCD DO	O	LCD data output
19	LCD CE	O	LCD chip enable output
20	LCD CLK	O	LCD clock output
21	PLL CLK	O	PLL IC clock output
22	PLL DO	O	PLL IC data output
23	PLL CE	O	PLL IC chip enable output
24	VDD1	—	Power supply pin (+5 V)
25	AVSS	—	Ground
26	ST IND	I	FM STEREO detection input
27	FUN SEL	I	Function select input
28	S METER	I	S meter signal input
29, 30	KEY0, 1	I	A/D key input 0, 1
31	TEL ATT	I	Attenuator signal input
32	DST SEL	I	Destination select input
33	$\overline{\text{TEST}}$	I	Force test mode input
34	AVREF	—	A/D converter power supply pin (+5 V)
35	AVDD	—	A/D converter power supply pin (+5 V)
36	$\overline{\text{RESET}}$	I	Reset input
37	XT2	O	Sub clock output (32.768 kHz)
38	XT1	I	Sub clock input (32.768 kHz)
39	IC	—	Connect to Ground in this set.
40	X2	O	Master clock output (8.38 MHz)
41	X1	I	Master clock input (8.38 MHz)
42	VSS1	—	Ground
43	KEY ACK	I	Key acknowledge detection input
44	SIRCS	I	SIRCS input
45	$\overline{\text{SELF SW}}$	I	Self switch detection input
46	$\overline{\text{BU IN}}$	I	Backup power supply detection input
47	AD ON	O	Key power supply control output
48	ILL ON	O	Illumination power supply control output
49	AMP ON	O	Amplifier remote power supply control output
50	CDM ON	O	CD mechanism deck power supply control output
51	$\overline{\text{XCD ON}}$	O	CD DSP IC 16 MHz X'tal ON/OFF control output
52	TU ON	O	Tuner power supply control output

Pin No.	Pin Name	I/O	Pin Description
53	P.ON	O	System power supply control output
54	X SO	O	CD DSP IC serial data output
55	X SI	I	CD DSP IC serial data input
56	X SCK	O	CD DSP IC serial clock output
57	RFOK	I	CD servo IC RFOK signal input
58	$\overline{\text{X RST}}$	O	CD DSP IC reset control output
59	$\overline{\text{ACC IN}}$	I	Accessory power supply detection input
60	AO	O	CD servo IC command/pallameter discrimination signal output
61	STB	O	CD servo IC data strobe signal output
62	XEN	O	CD DSP IC X’tal control output
63	L SW	I	Limit switch detection input
64	PH1	I	PH1 detection input (Not used in this set)

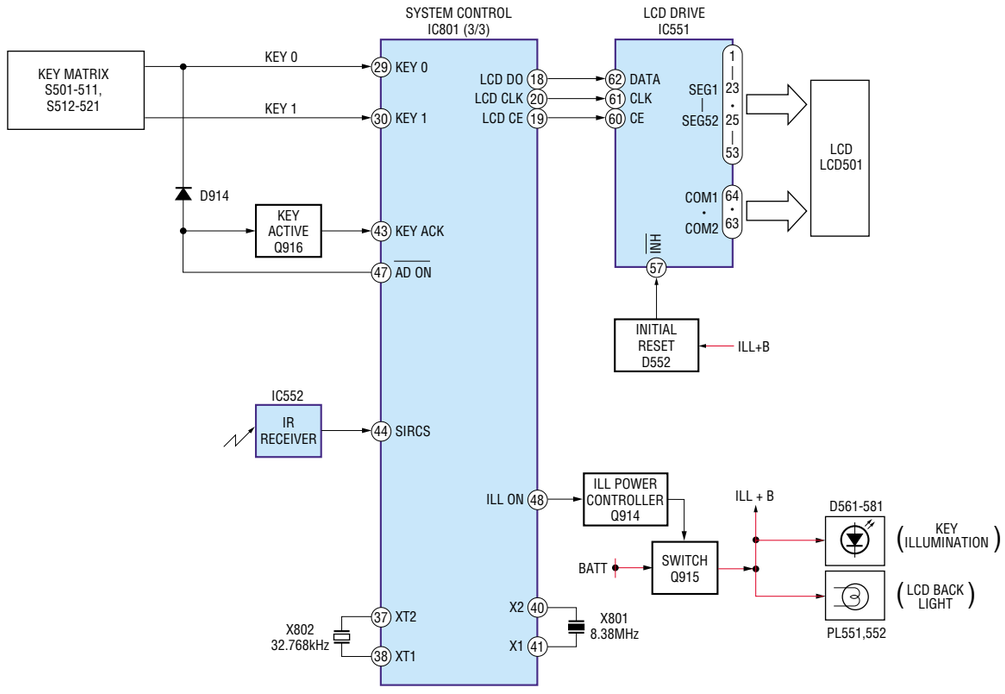
4-2. BLOCK DIAGRAM — CD SECTION —



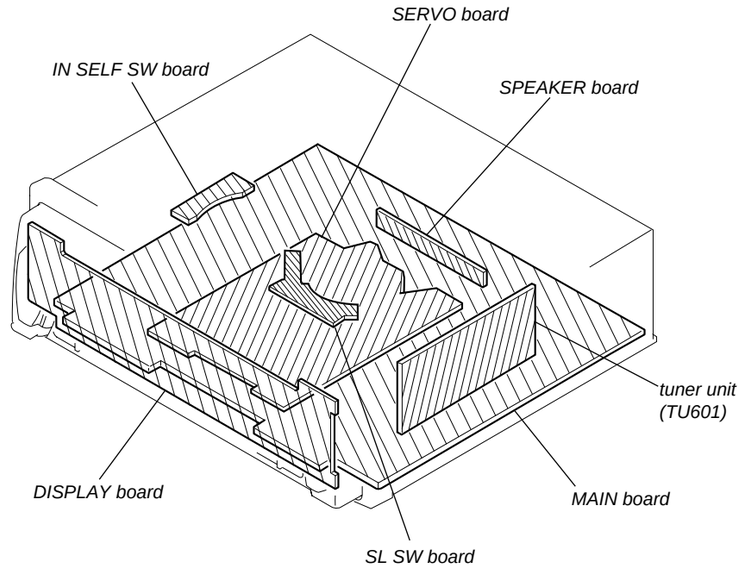
4-3. BLOCK DIAGRAM — TUNER SECTION —



4-4. BLOCK DIAGRAM — DISPLAY SECTION —



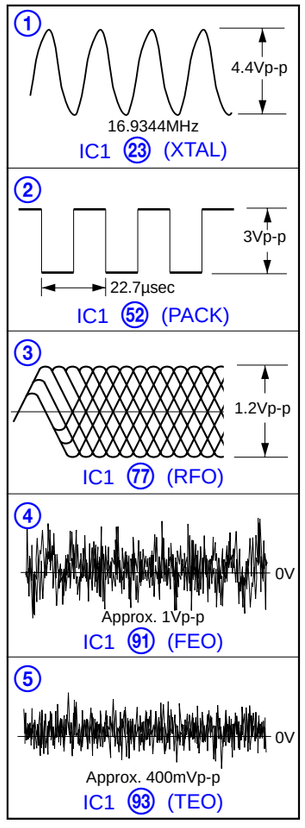
4-5. CIRCUIT BOARDS LOCATION



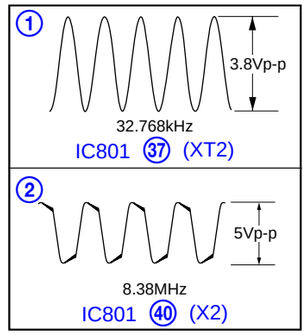
- **Waveforms**

— Servo Board —

(MODE: CD PLAY)



— Main Board —



THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this, the necessary note is printed in each block.)

for schematic diagram:

- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- % : indicates tolerance.
- Δ : internal component.
- ▭ : panel designation.

Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

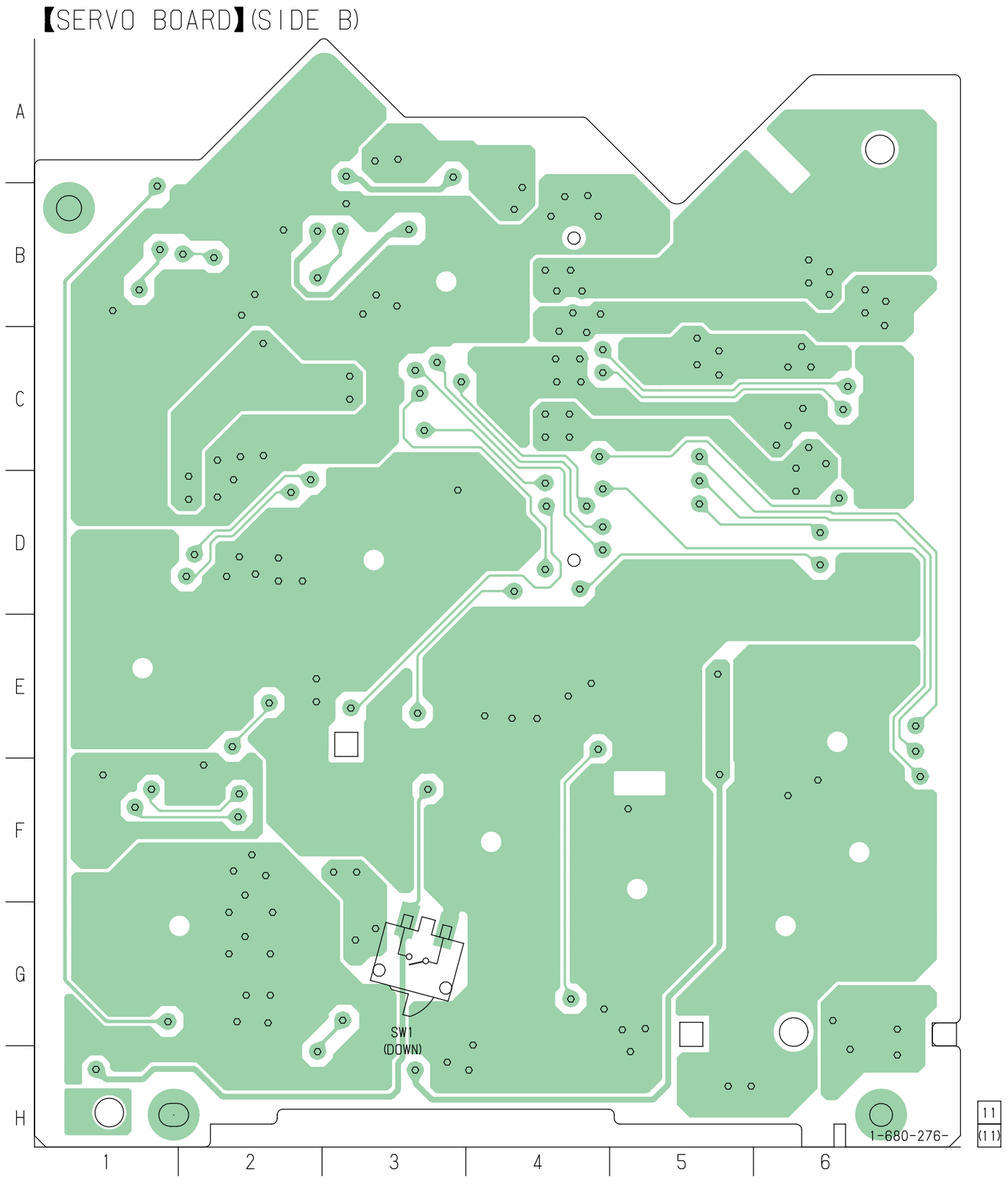
- ▬ : B+ Line.
- Power voltage is dc 14.4V and fed with regulated dc power supply from ACC and BATT cords.
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  - ⇨ : FM
  - ➡ : AM
  - ⇨ : CD

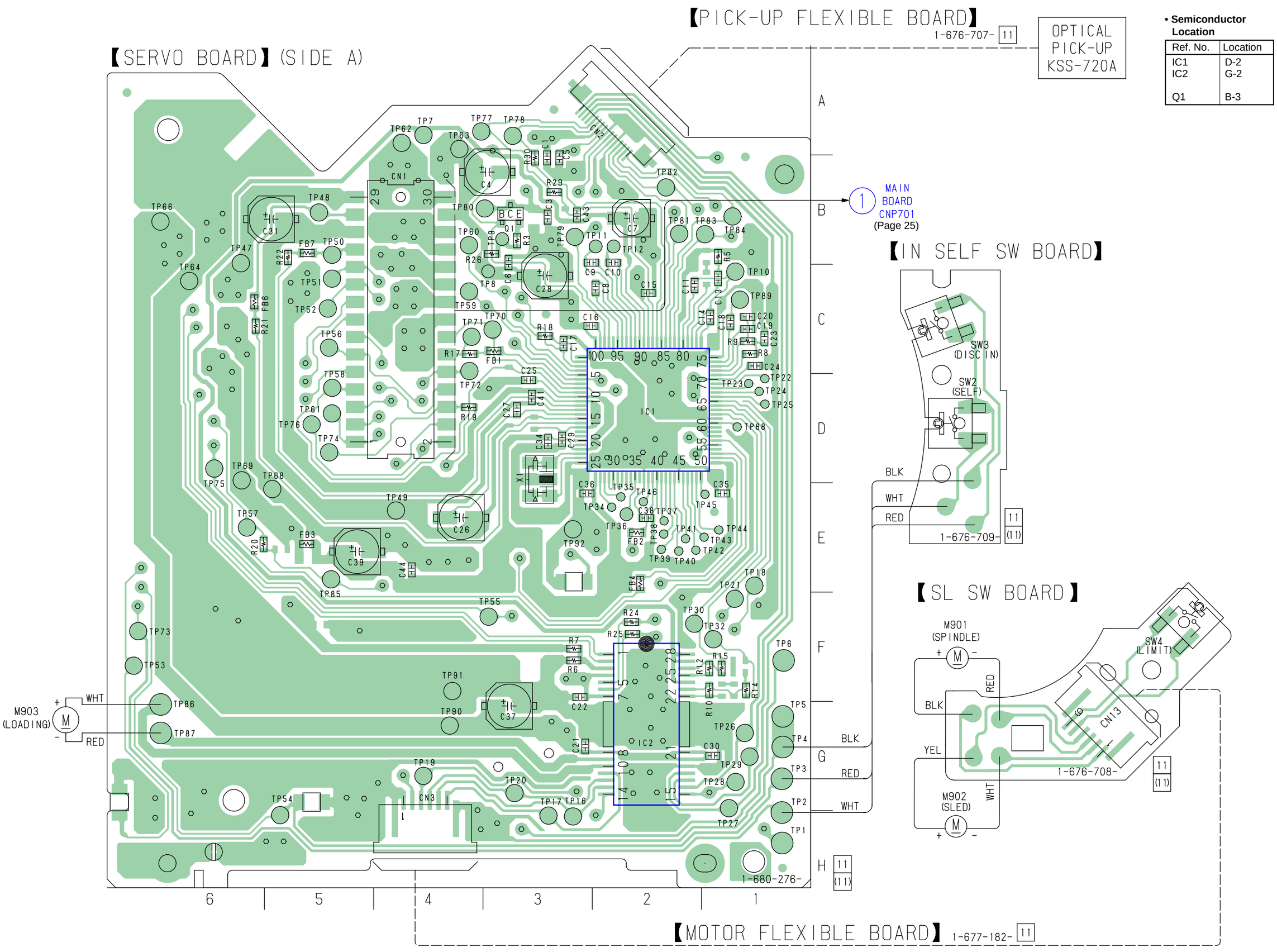
for printed wiring boards:

- ○——— : parts extracted from the component side.
- ——— : parts extracted from the conductor side.
- ■ : parts mounted on the conductor side.
- ○ : Through hole.
- ▬ : Pattern from the side which enables seeing. (The other layer's patterns are not indicated.)

Caution:	
Pattern face side: (Side B)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Side A)	Parts on the parts face side seen from the parts face are indicated.

4-6. PRINTED WIRING BOARDS — CD MECHANISM SECTION — • Refer to page 21 for Circuit Boards Location.





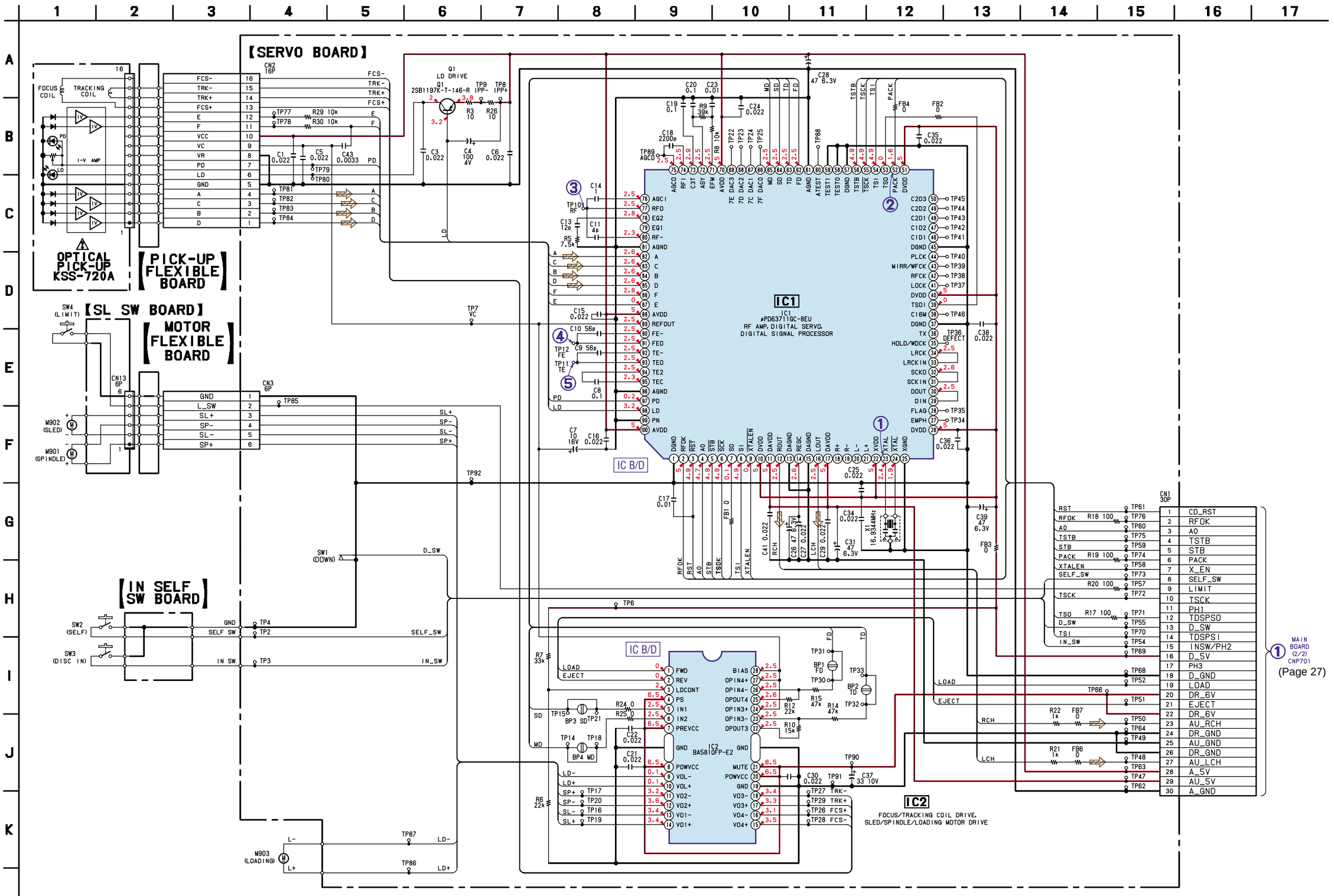
- **Semiconductor Location**

Ref. No.	Location
IC1	D-2
IC2	G-2
Q1	B-3

• Refer to page 21 for Waveforms.

4-7. SCHEMATIC DIAGRAM — CD MECHANISM SECTION —

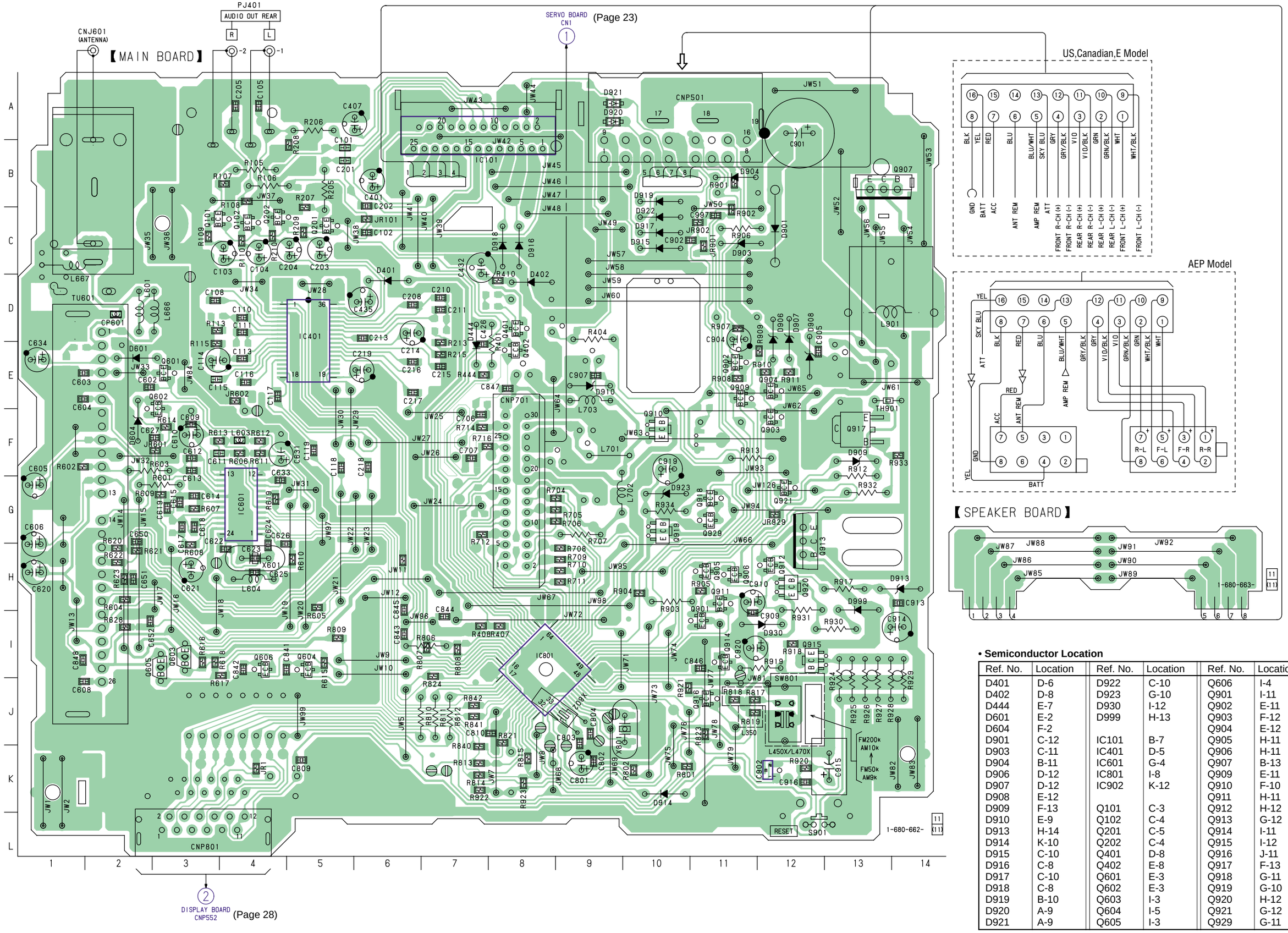
• Refer to page 30 for IC Block Diagrams.



Note:

- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : CD PLAY

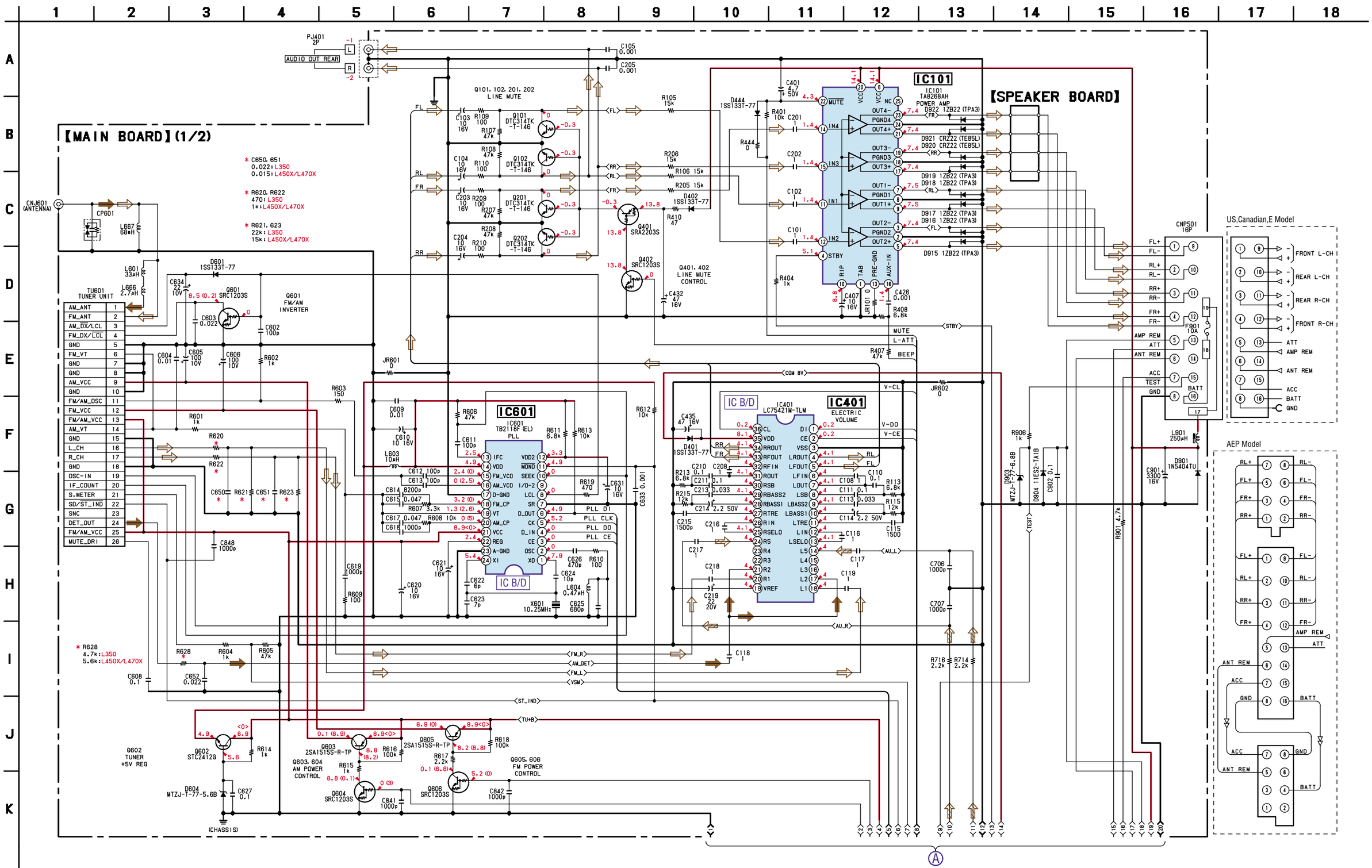
4-8. PRINTED WIRING BOARD — MAIN SECTION — • Refer to page 21 for Circuit Boards Location.



• **Semiconductor Location**

Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
D401	D-6	D922	C-10	Q606	I-4
D402	D-8	D923	G-10	Q901	I-11
D444	E-7	D930	I-12	Q902	E-11
D601	E-2	D999	H-13	Q903	F-12
D604	F-2			Q904	E-12
D901	C-12	IC101	B-7	Q905	H-11
D903	C-11	IC401	D-5	Q906	H-11
D904	B-11	IC601	G-4	Q907	B-13
D906	D-12	IC801	I-8	Q909	E-11
D907	D-12	IC902	K-12	Q910	F-10
D908	E-12			Q911	H-11
D909	F-13	Q101	C-3	Q912	H-12
D910	E-9	Q102	C-4	Q913	G-12
D913	H-14	Q201	C-5	Q914	I-11
D914	K-10	Q202	C-4	Q915	I-12
D915	C-10	Q401	D-8	Q916	J-11
D916	C-8	Q402	E-8	Q917	F-13
D917	C-10	Q601	E-3	Q918	G-11
D918	C-8	Q602	E-3	Q919	G-10
D919	B-10	Q603	I-3	Q920	H-12
D920	A-9	Q604	I-5	Q921	G-12
D921	A-9	Q605	I-3	Q929	G-11

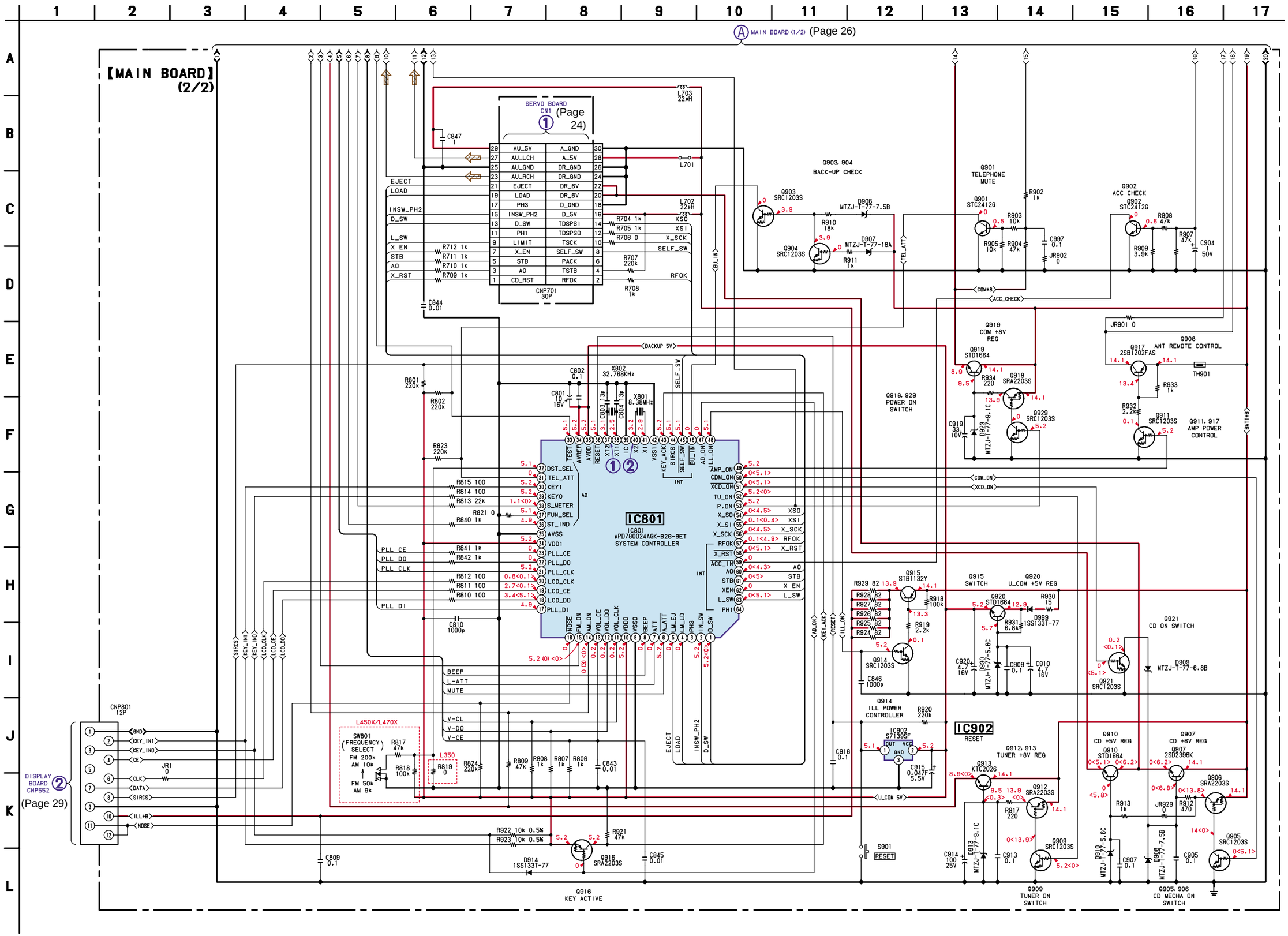
4-9. SCHEMATIC DIAGRAM — MAIN SECTION (1/2) — • Refer to page 30 for IC Block Diagrams.



Note:

- Voltage is dc with respect to ground under no-signal (detuned) condition.
  no mark : FM
  ( ) : AM
  < > : CD PLAY

4-10. SCHEMATIC DIAGRAM — MAIN SECTION (2/2) — • Refer to page 21 for Waveforms.

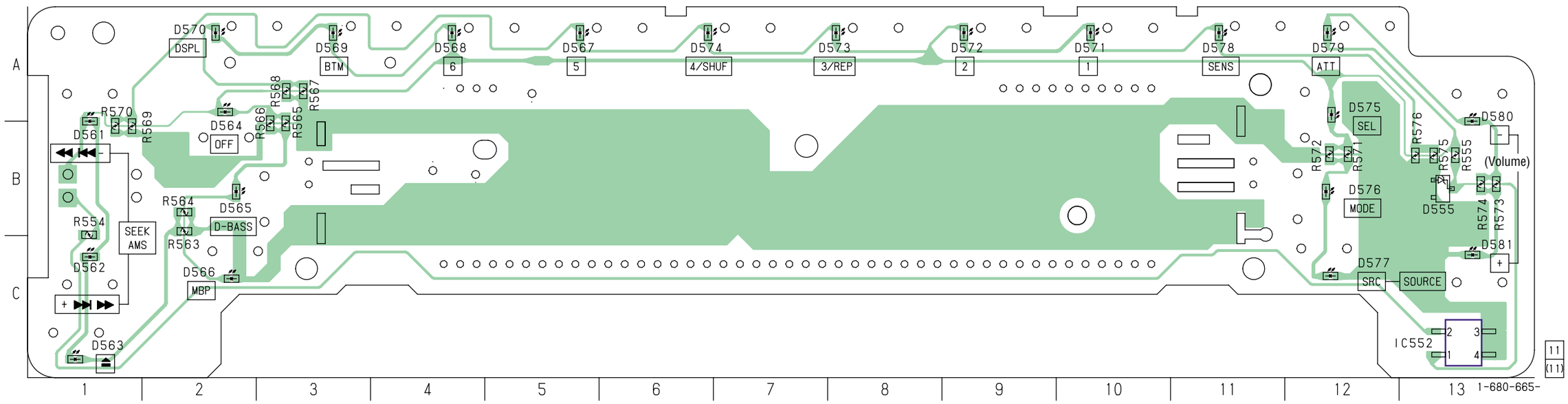


Note:

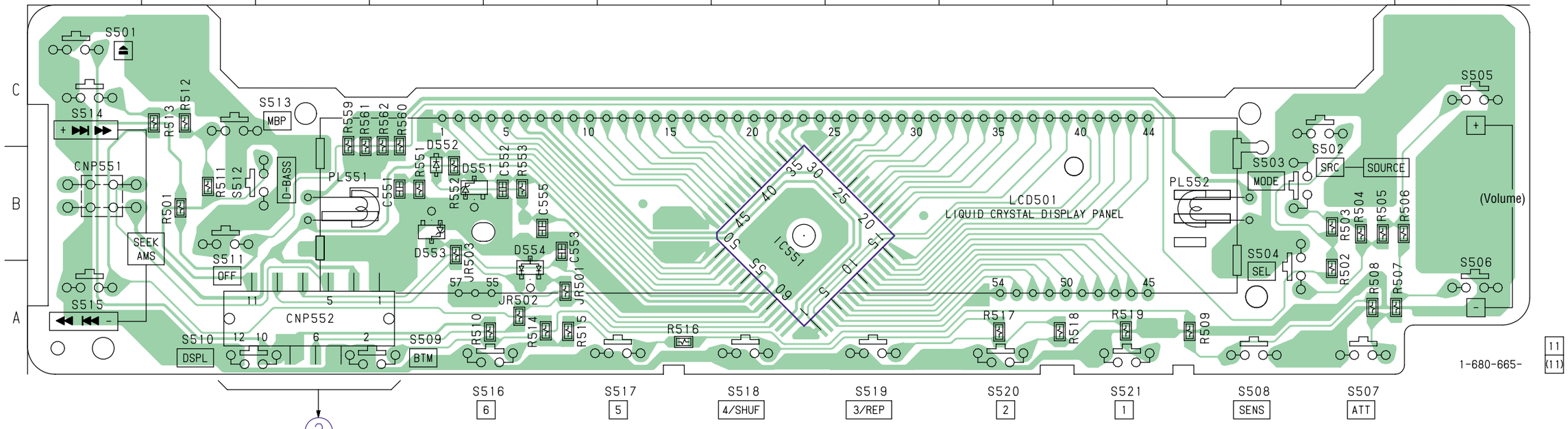
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : FM
  ( ) : AM
  < > : CD PLAY

4-11. PRINTED WIRING BOARD — DISPLAY SECTION — • Refer to page 21 for Circuit Boards Location.

【DISPLAY BOARD】(SIDE A)



【DISPLAY BOARD】(SIDE B)



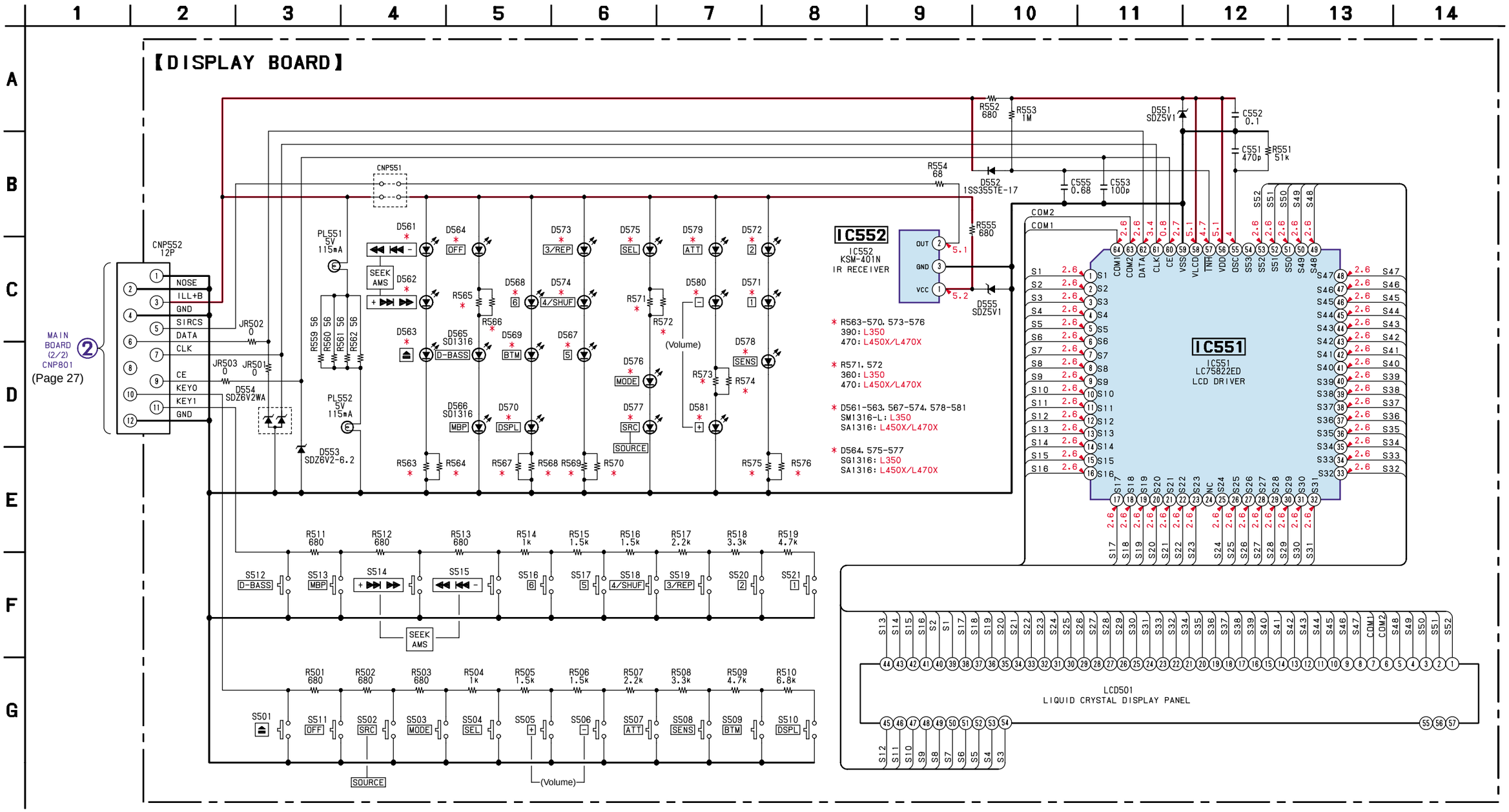
2
MAIN BOARD
CNP801
(Page 25)

• Semiconductor Location

Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
(D551)	B-4	D564	A-2	D572	A-9	D580	A-13
D552	B-4	D565	B-2	D573	A-8	D581	C-13
(D553)	B-4	D566	C-2	D574	A-6		
(D554)	A-5	D567	A-5	D575	A-12	(IC551)	B-7
D555	B-13	D568	A-4	D576	B-12	IC552	C-13
D561	B-1	D569	A-3	D577	C-12		
D562	C-1	D570	A-2	D578	A-11		
D563	C-1	D571	A-10	D579	A-12		

( ): SIDE B

4-12. SCHEMATIC DIAGRAM — DISPLAY SECTION —

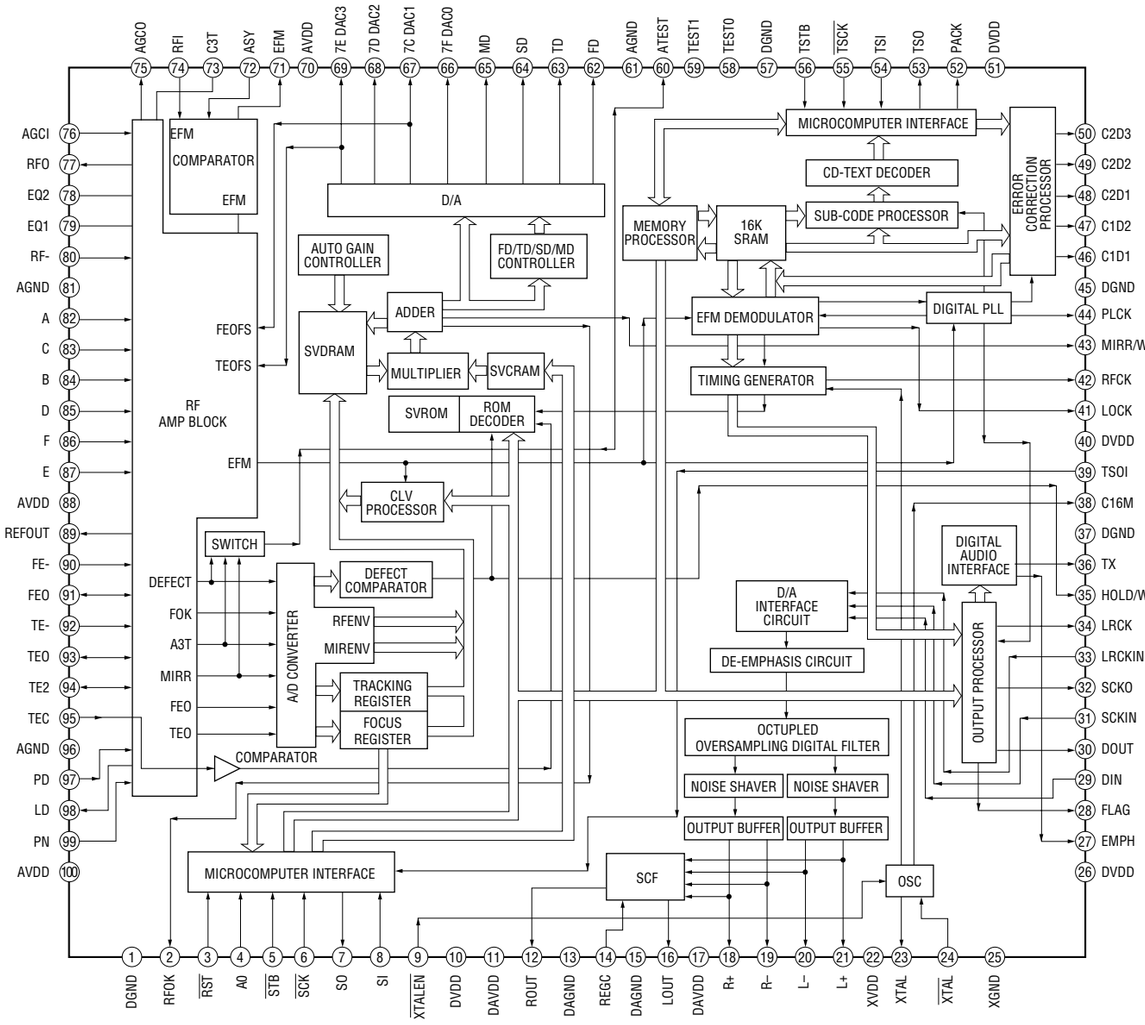


Note:

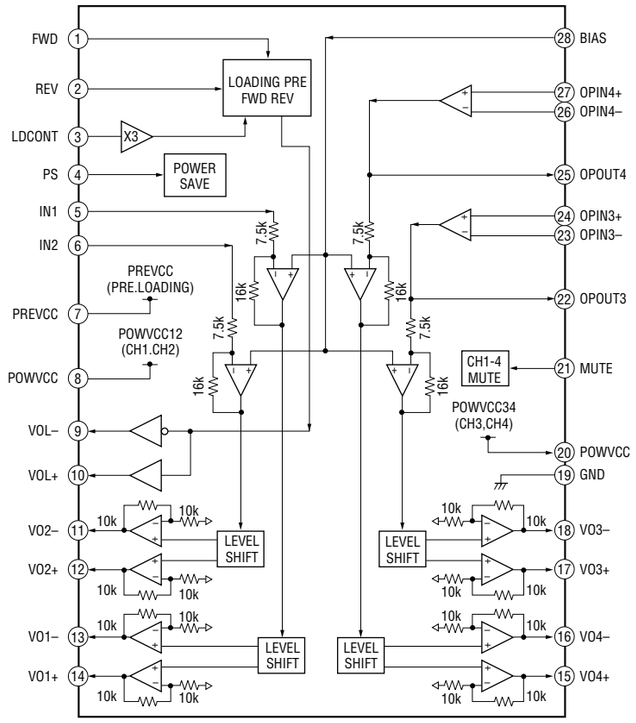
- Voltage is dc with respect to ground under no-signal (detuned) condition.
  no mark : FM

• IC Block Diagrams

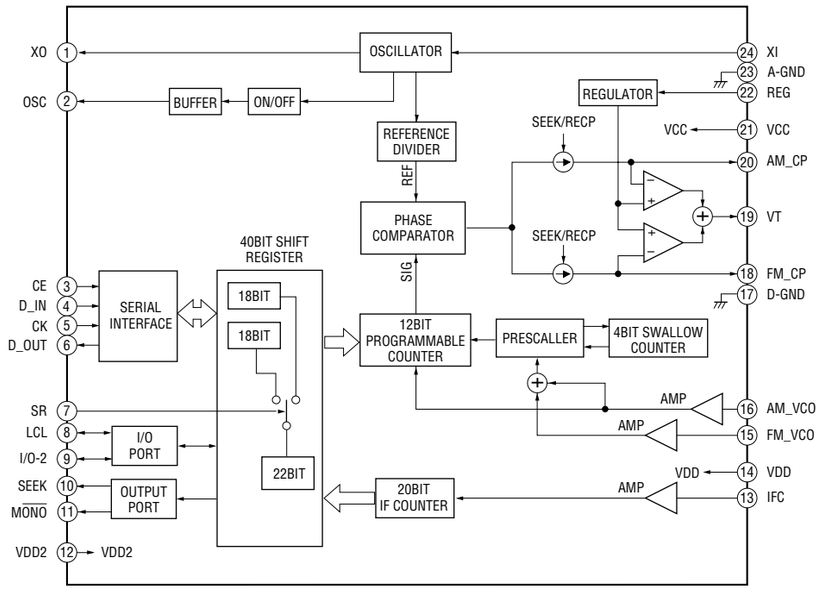
IC1 µPD63711GC-8EU



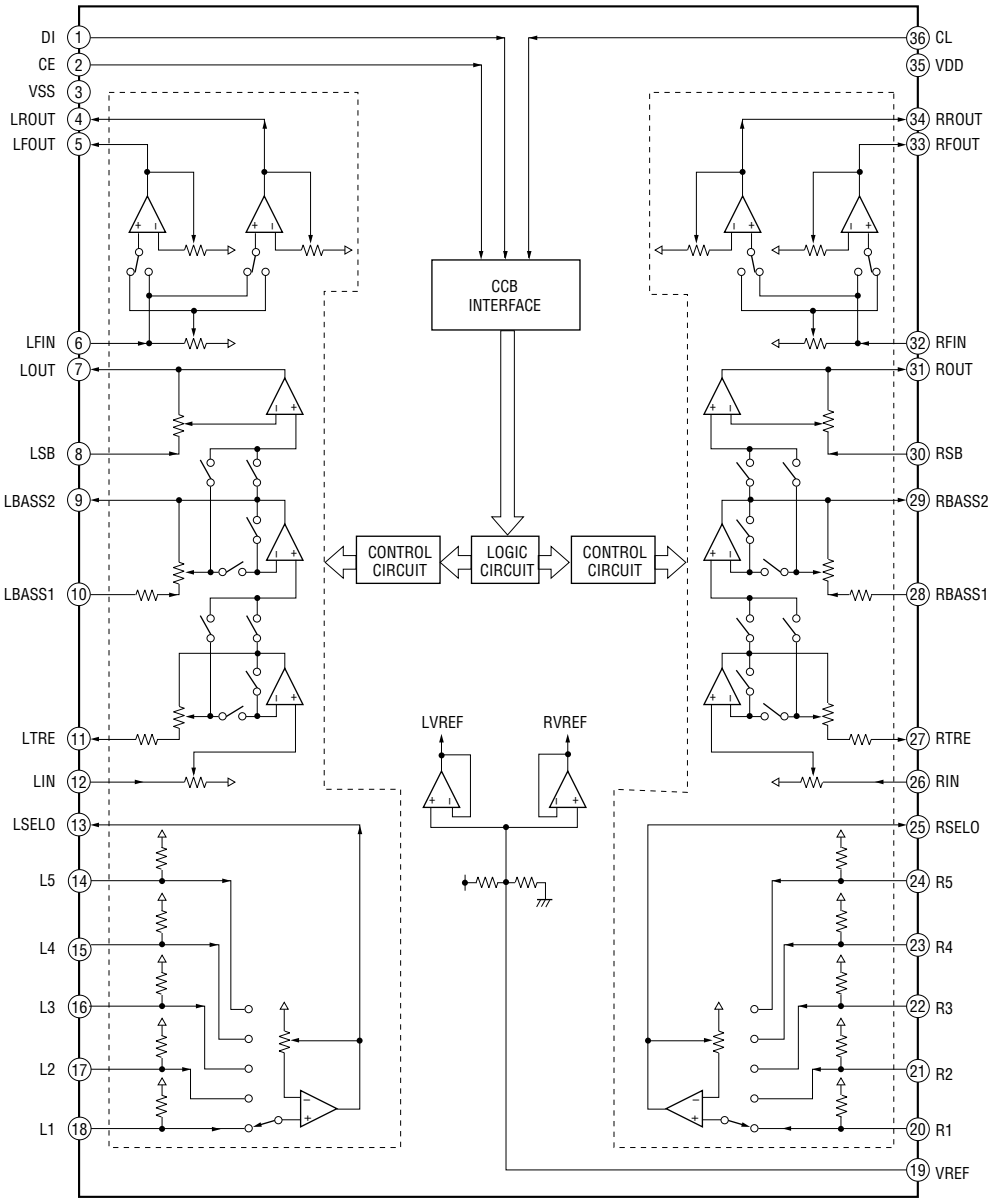
IC2 BA5810FP-E2



IC601 TB2118F (EL)



IC401 LC75421M-TLM



SECTION 5
EXPLODED VIEWS

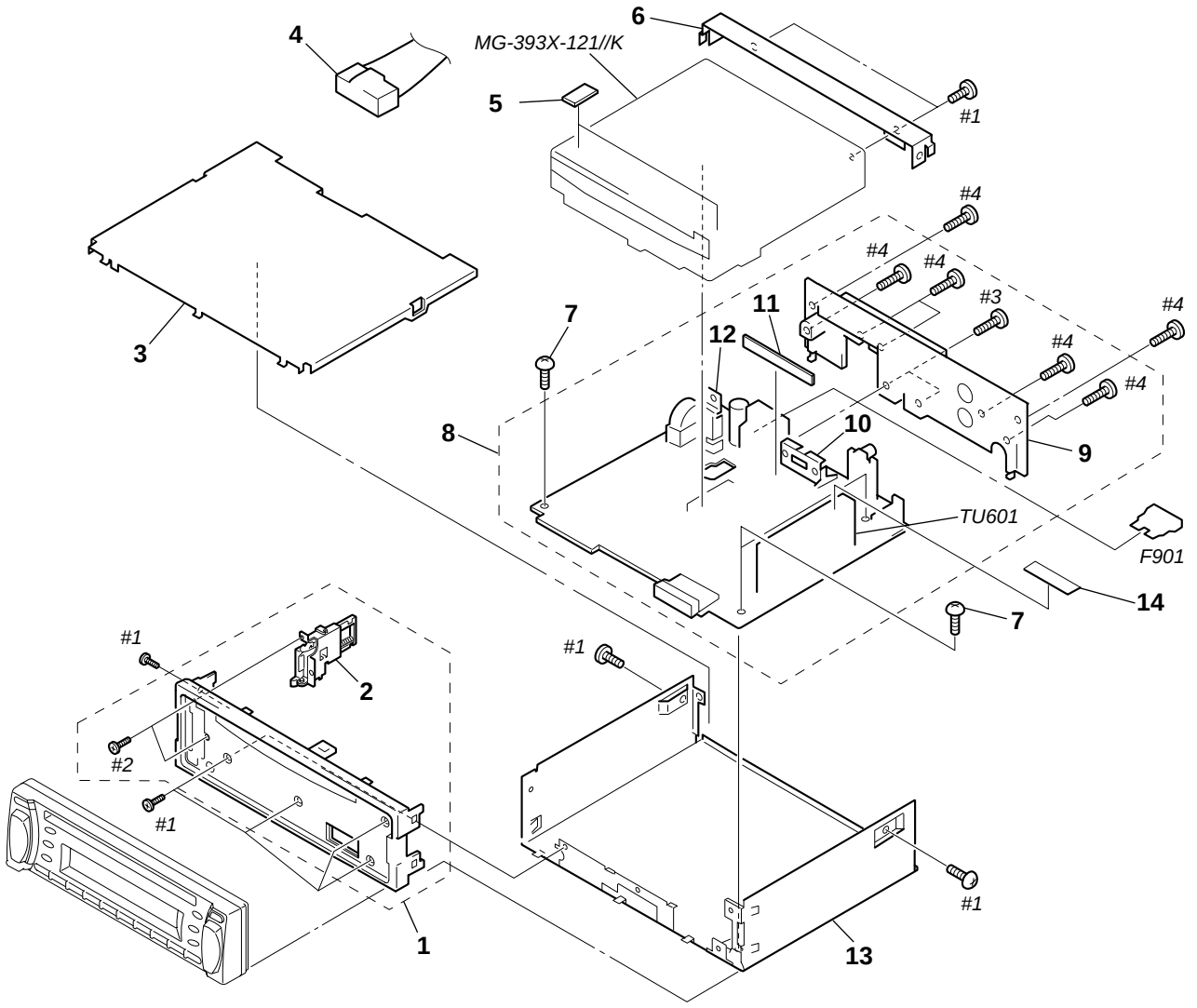
NOTE:
- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX and -X mean standardized parts, so they may have some difference from the original one.

- Color Indication of Appearance Parts
  Example :
  KNOB, BALANCE (WHITE) ... (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Accessories and packing materials and hardware (# mark) list are given in the last of this parts list.
- Abbreviation
  CND : Canadian model

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

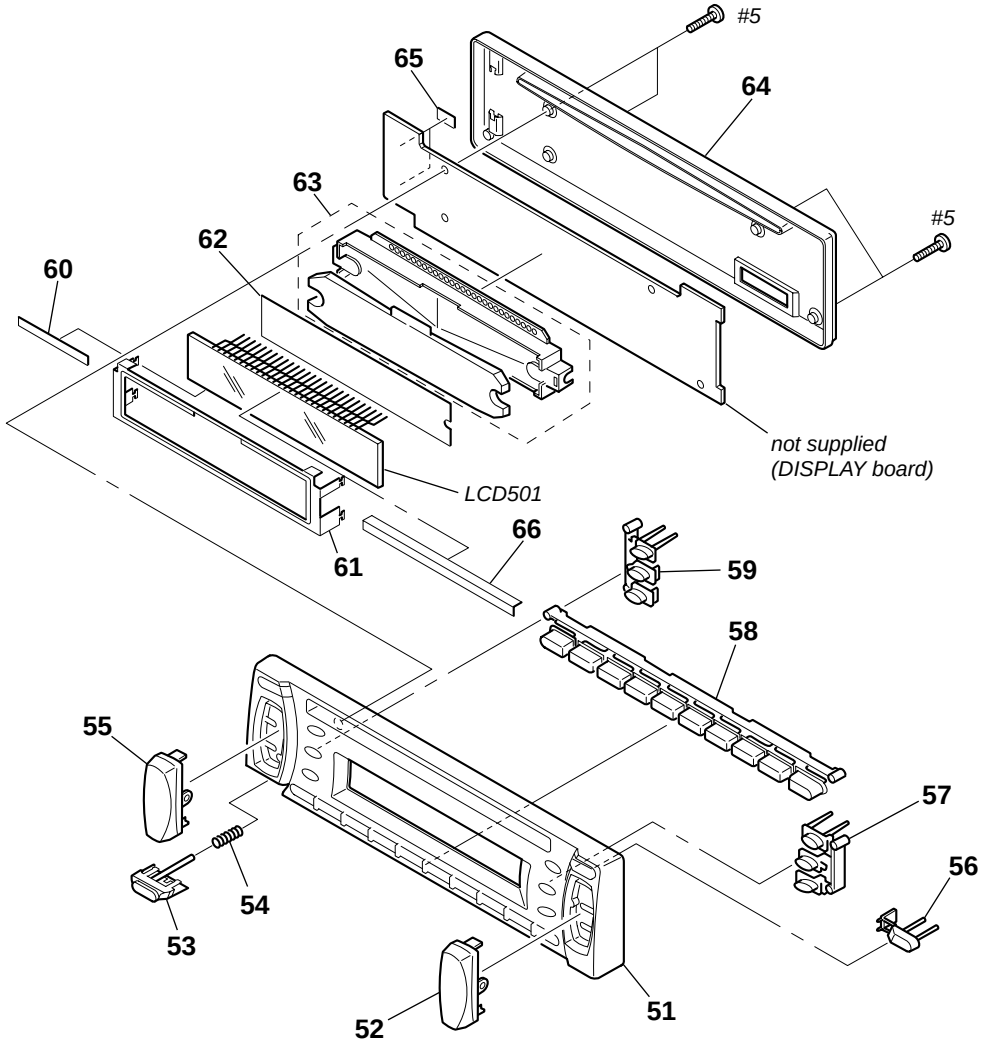
5-1. CHASSIS SECTION



Ref. No.	Part No.	Description	Remark
1	X-3379-736-1	PANEL ASSY, SUB	
2	X-3380-594-1	LOCK ASSY (S)	
* 3	3-224-309-01	COVER	
4	1-776-206-21	CORD (WITH CONNECTOR) (POWER) (US,CND,E)	
4	1-776-527-11	CORD (WITH CONNECTOR) (ISO) (POWER) (AEP)	
* 5	3-024-285-01	CUSHION (RUBBER)	
* 6	3-041-173-11	BRACKET (CD)	
7	3-922-535-11	SCREW (+BTT)	
* 8	A-3283-105-A	MAIN BOARD, COMPLETE (L350)	
* 8	A-3283-107-A	MAIN BOARD, COMPLETE (L450X/L470X)	

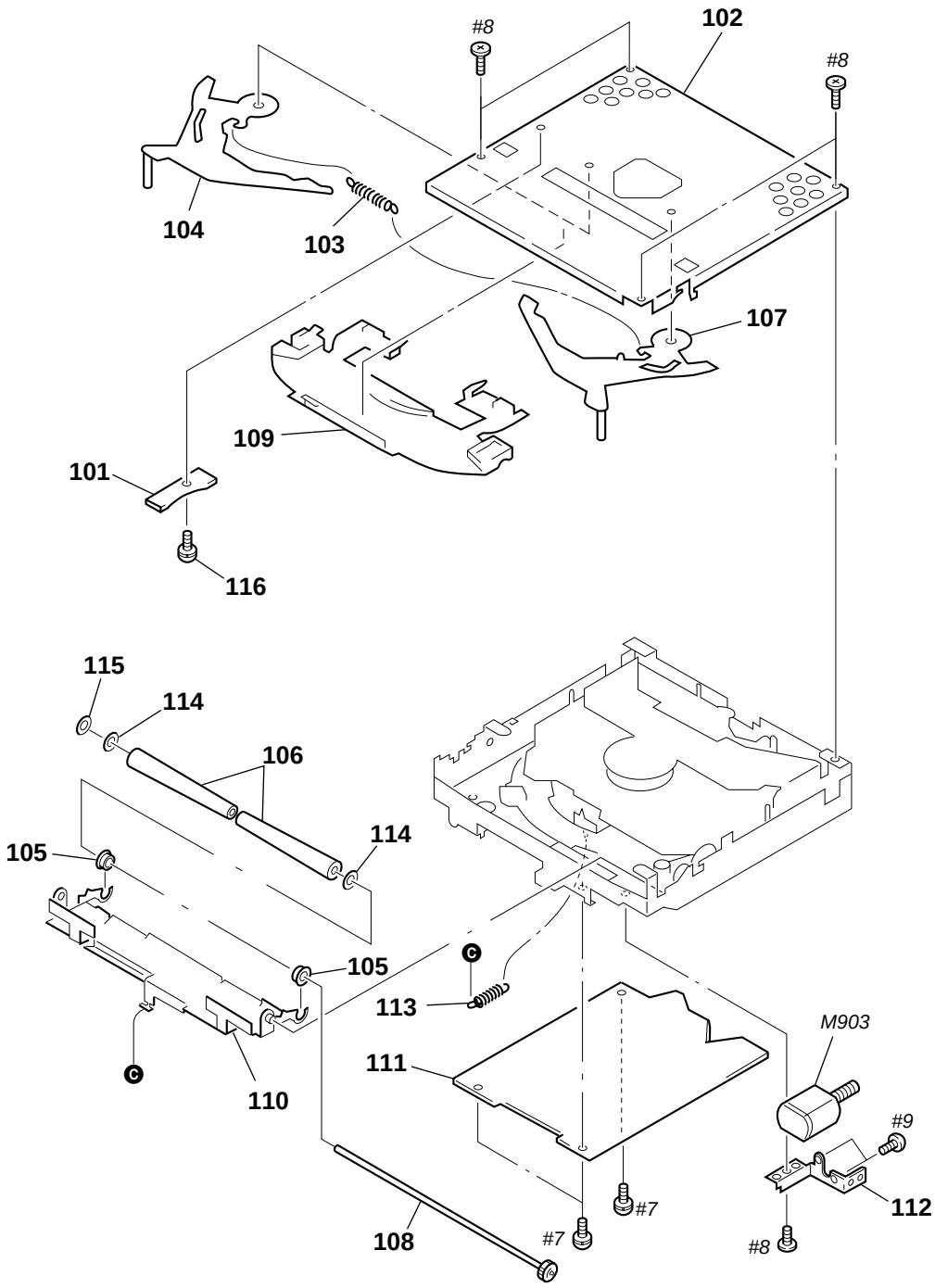
Ref. No.	Part No.	Description	Remark
* 9	3-224-613-01	HEAT SINK	
* 10	3-019-565-01	BRACKET (IC)	
* 11	1-680-663-11	SPEAKER BOARD	
* 12	3-041-261-01	BRACKET (TR)	
* 13	3-224-612-01	CHASSIS (CD)	
* 14	3-048-259-01	SHEET (E)	
F901	1-532-877-11	FUSE (BLADE TYPE) (AUTO FUSE) 10A	
TU601	1-693-511-11	TUNER UNIT	

5-2. FRONT PANEL SECTION



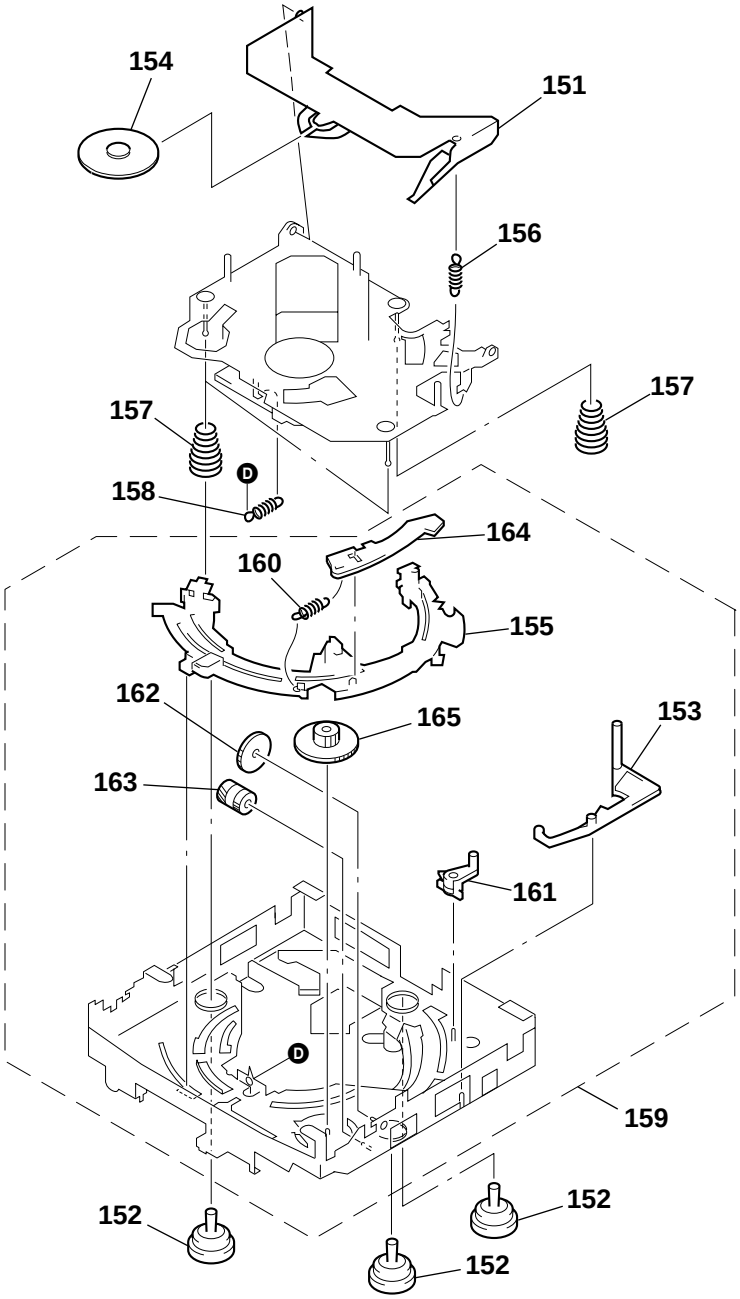
Ref. No.	Part No.	Description	Remark
51	X-3379-989-1	PANEL SUB ASSY, FRONT (L350)	
51	X-3379-990-1	PANEL SUB ASSY, FRONT (L470X)	
51	X-3379-991-1	PANEL SUB ASSY, FRONT (L450X)	
52	3-224-605-01	BUTTON (SEEK/AMS)	
53	3-224-606-01	BUTTON (RELEASE)	
54	3-229-774-01	SPRING (RELEASE)	
55	3-224-604-01	BUTTON (+/–) (L350)	
55	3-224-604-11	BUTTON (+/–) (L450X/L470X)	
56	3-224-601-01	BUTTON (EJECT)	
57	3-224-603-01	BUTTON (OFF)	
58	3-224-600-01	BUTTON (1-6)	
59	3-224-602-01	BUTTON (SOURCE)	
* 60	3-227-293-01	SHEET (LCD)	
* 61	3-224-609-01	PLATE (LCD), GROUND	
* 62	3-224-610-01	SHEET (LCD), DIFFUSION	
* 63	X-3379-734-1	HOLDER (LCD) ASSY	
64	3-224-599-01	PANEL, FRONT BACK	
65	3-226-909-01	SHEET, BACK	
* 66	3-229-751-01	SHEET (LCD, UP)	
LCD501	1-804-300-11	DISPLAY PANEL, LIQUID CRYSTAL	

5-3. CD MECHANISM SECTION (1)
(MG-393X-121//K)



Ref. No.	Part No.	Description	Remark
* 101	1-676-709-11	IN SELF SW BOARD	
102	3-040-039-01	CHASSIS (T)	
103	3-040-038-01	SPRING (LR), TENSION	
104	3-040-050-01	LEVER (L)	
105	3-040-022-01	RETAINER (ROLLER), SHAFT	
106	3-040-044-01	ROLLER (S)	
107	3-040-067-01	LEVER (R)	
108	A-3301-980-A	SHAFT ROLLER ASSY	
109	3-040-037-01	GUIDE (DISC)	
110	3-040-040-01	ARM (ROLLER)	
* 111	A-3283-048-A	SERVO BOARD, COMPLETE	
112	3-221-779-01	BRACKET (MOTOR)	
113	3-040-034-01	SPRING (RA), TENSION	
114	3-040-042-01	WASHER	
115	3-043-880-01	RING (RA), RETAINING	
116	3-044-206-11	SCREW, SPECIAL	
M903	A-3315-039-A	MOTOR SUB ASSY, LO (LOADING)	

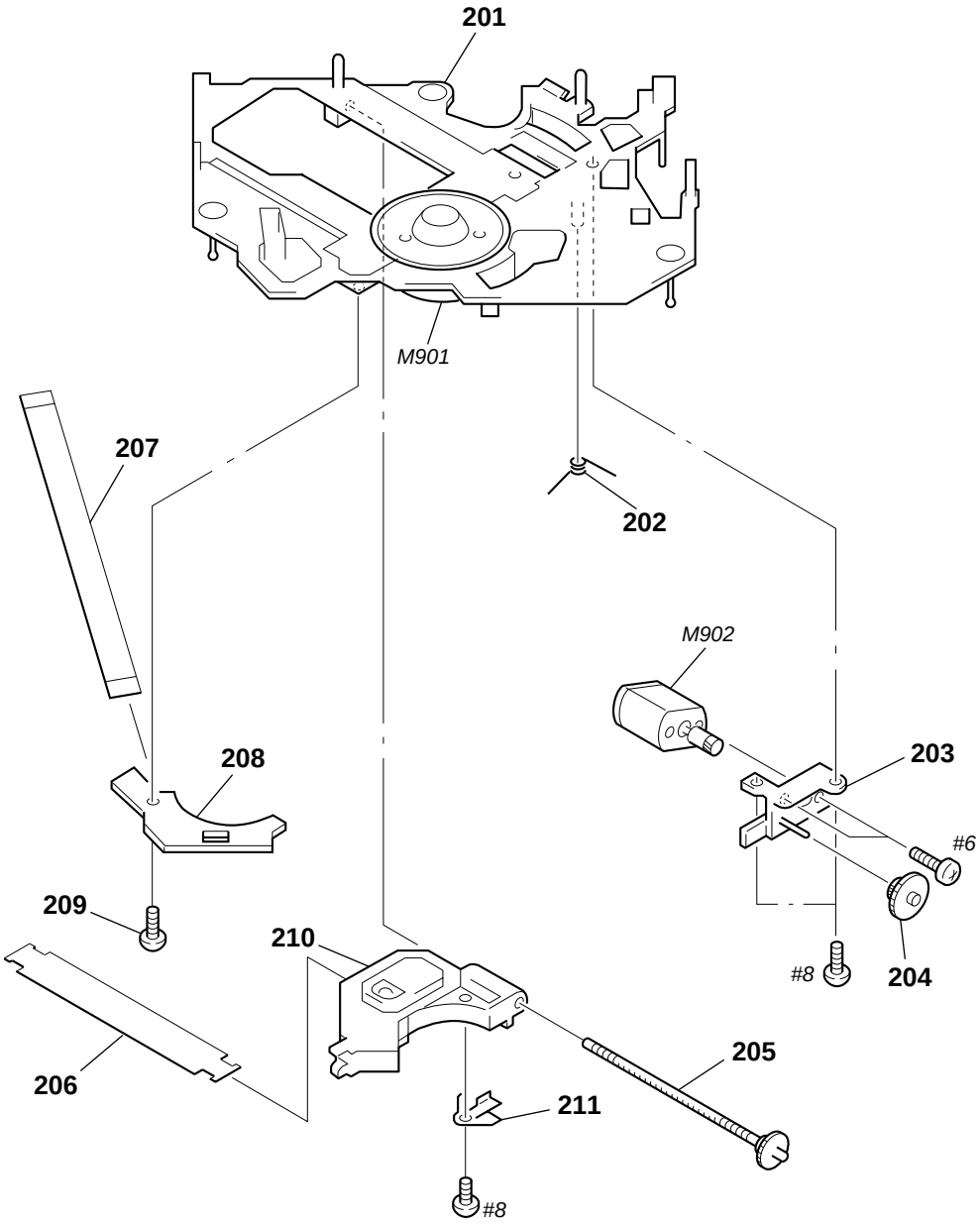
5-4. CD MECHANISM SECTION (2)
(MG-393X-121//K)



Ref. No.	Part No.	Description	Remark
151	3-040-025-01	ARM, CHUCKING	
152	3-040-031-01	DAMPER (T)	
153	3-040-056-01	LEVER (D)	
154	3-040-024-01	RETAINER (DISC)	
155	3-040-053-01	RING, LOADING	
156	3-040-026-01	SPRING (CH), TENSION	
157	3-040-032-01	SPRING (FL), COMPRESSION	
158	3-040-033-01	SPRING (KF1), TENSION	

Ref. No.	Part No.	Description	Remark
159	A-3307-422-A	CHASSIS (M) COMPLETE ASSY	
160	3-040-059-01	SPRING (TR), TENSION	
161	3-040-057-01	LEVER (LOCK)	
162	3-040-058-01	GEAR (MDL)	
163	3-040-052-01	WHEEL (U), WORM	
164	3-040-051-01	LEVER (TR)	
165	3-040-054-01	WHEEL (LW), WORM	

5-5. CD MECHANISM SECTION (3)
(MG-393X-121//K)



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
201	X-3378-480-1	CHASSIS (OP) ASSY (including M901)	
202	3-040-029-01	SPRING (SL), TORSION	
203	3-040-045-01	BASE (DRIVING)	
204	3-040-194-01	GEAR (MIDWAY)	
205	A-3301-983-A	SHAFT (FEED) ASSY	
206	1-676-707-11	PICK-UP FLEXIBLE BOARD	
207	1-677-182-11	MOTOR FLEXIBLE BOARD	
* 208	1-676-708-11	SL SW BOARD	
209	3-909-607-01	SCREW	
⚠210	8-820-103-03	PICK-UP, OPTICAL KSS-720A/K1RP	
211	3-040-030-01	SPRING (FEED), PLATE	
M902	A-3301-985-A	MOTOR ASSY, SLED (SLED)	

SECTION 6
ELECTRICAL PARTS LIST

DISPLAY

NOTE:
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Abbreviation
  CND : Canadian model
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u : µ, for example:
  uA.. : µA.. uPA.. : µPA..
  uPB.. : µPB.. uPC.. : µPC.. uPD.. : µPD..
- CAPACITORS
  uF : µF
- COILS
  uH : µH

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
		DISPLAY BOARD			
		**********			
*	3-224-609-01	PLATE (LCD), GROUND			
*	3-224-610-01	SHEET (LCD), DIFFUSION			
*	3-227-293-01	SHEET (LCD)			
*	3-229-751-01	SHEET (LCD, UP)			
		< CAPACITOR >			
C551	1-164-315-11	CERAMIC CHIP	470PF	5%	50V
C552	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C553	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C555	1-119-866-11	CERAMIC CHIP	0.68uF	10%	10V
		< CONNECTOR >			
* CNP551	1-779-131-11	PIN, CONNECTOR 2P			
CNP552	1-794-312-21	PIN, CONNECTOR 12P			
		< DIODE >			
D551	8-719-073-15	DIODE SDZ5V1			
D552	8-719-988-61	DIODE 1SS355TE-17			
D553	8-719-067-70	DIODE SDZ6V2-6.2			
D554	8-719-068-68	DIODE SDZ6V2WA			
D555	8-719-073-15	DIODE SDZ5V1			
D561	8-719-083-96	LED SM1316-L (◀◀ I◀◀ – (SEEK/AMS))			(L350)
D561	8-719-083-97	LED SA1316 (◀◀ I◀◀ – (SEEK/AMS))			(L450X/L470X)
D562	8-719-083-96	LED SM1316-L (+ ▶▶I ▶▶ (SEEK/AMS))			(L350)
D562	8-719-083-97	LED SA1316 (+ ▶▶I ▶▶ (SEEK/AMS))			(L450X/L470X)
D563	8-719-083-96	LED SM1316-L (⏏) (L350)			
D563	8-719-083-97	LED SA1316 (⏏) (L450X/L470X)			
D564	8-719-083-97	LED SA1316 (OFF) (L450X/L470X)			
D564	8-719-083-99	LED SG1316 (OFF) (L350)			
D565	8-719-083-98	LED SO1316 (D (D-BASS))			
D566	8-719-083-98	LED SO1316 (MBP)			
D567	8-719-083-96	LED SM1316-L (5) (L350)			
D567	8-719-083-97	LED SA1316 (5) (L450X/L470X)			
D568	8-719-083-96	LED SM1316-L (6) (L350)			
D568	8-719-083-97	LED SA1316 (6) (L450X/L470X)			
D569	8-719-083-96	LED SM1316-L (BTM) (L350)			
D569	8-719-083-97	LED SA1316 (BTM) (L450X/L470X)			
D570	8-719-083-96	LED SM1316-L (DSPL) (L350)			
D570	8-719-083-97	LED SA1316 (DSPL) (L450X/L470X)			
D571	8-719-083-96	LED SM1316-L (1) (L350)			
D571	8-719-083-97	LED SA1316 (1) (L450X/L470X)			
D572	8-719-083-96	LED SM1316-L (2) (L350)			
D572	8-719-083-97	LED SA1316 (2) (L450X/L470X)			
D573	8-719-083-96	LED SM1316-L (3/REP) (L350)			
D573	8-719-083-97	LED SA1316 (3/REP) (L450X/L470X)			
D574	8-719-083-96	LED SM1316-L (4/SHUF) (L350)			
D574	8-719-083-97	LED SA1316 (4/SHUF) (L450X/L470X)			
D575	8-719-083-97	LED SA1316 (SEL) (L450X/L470X)			
D575	8-719-083-99	LED SG1316 (SEL) (L350)			
D576	8-719-083-97	LED SA1316 (MODE) (L450X/L470X)			
D576	8-719-083-99	LED SG1316 (MODE) (L350)			
D577	8-719-083-97	LED SA1316 (SRC (SOURCE))			(L450X/L470X)
D577	8-719-083-99	LED SG1316 (SRC (SOURCE)) (L350)			
D578	8-719-083-96	LED SM1316-L (SENS) (L350)			
D578	8-719-083-97	LED SA1316 (SENS) (L450X/L470X)			
D579	8-719-083-96	LED SM1316-L (ATT) (L350)			
D579	8-719-083-97	LED SA1316 (ATT) (L450X/L470X)			
D580	8-719-083-96	LED SM1316-L (– (Volume)) (L350)			
D580	8-719-083-97	LED SA1316 (– (Volume)) (L450X/L470X)			
D581	8-719-083-96	LED SM1316-L (+ (Volume)) (L350)			
D581	8-719-083-97	LED SA1316 (+ (Volume)) (L450X/L470X)			
		< IC >			
IC551	8-759-369-90	IC LC75822ED			
IC552	8-749-017-35	IC KSM-401N			
		< JUMPER RESISTOR >			
JR501	1-216-864-11	SHORT	0		
JR502	1-216-864-11	SHORT	0		
JR503	1-216-864-11	SHORT	0		
		< LIQUID CRYSTAL DISPLAY >			
LCD501	1-804-300-11	DISPLAY PANEL, LIQUID CRYSTAL			
		< PILOT LAMP >			
PL551	1-518-753-11	LAMP, PILOT (L350)			
PL551	1-518-754-11	LAMP, PILOT (L450X/L470X)			
PL552	1-518-753-11	LAMP, PILOT (L350)			
PL552	1-518-754-11	LAMP, PILOT (L450X/L470X)			
		< RESISTOR >			
R501	1-219-286-11	RES-CHIP	680	2%	1/16W

DISPLAY

Ref. No.	Part No.	Description			Remark
R502	1-219-286-11	RES-CHIP	680	2%	1/16W
R503	1-219-286-11	RES-CHIP	680	2%	1/16W
R504	1-218-847-11	RES-CHIP	1K	2%	1/16W
R505	1-218-851-11	RES-CHIP	1.5K	2%	1/16W
R506	1-218-851-11	RES-CHIP	1.5K	2%	1/16W
R507	1-218-855-11	RES-CHIP	2.2K	2%	1/16W
R508	1-218-859-11	RES-CHIP	3.3K	2%	1/16W
R509	1-218-863-11	RES-CHIP	4.7K	2%	1/16W
R510	1-218-867-11	RES-CHIP	6.8K	2%	1/16W
R511	1-219-286-11	RES-CHIP	680	2%	1/16W
R512	1-219-286-11	RES-CHIP	680	2%	1/16W
R513	1-219-286-11	RES-CHIP	680	2%	1/16W
R514	1-218-847-11	RES-CHIP	1K	2%	1/16W
R515	1-218-851-11	RES-CHIP	1.5K	2%	1/16W
R516	1-218-851-11	RES-CHIP	1.5K	2%	1/16W
R517	1-218-855-11	RES-CHIP	2.2K	2%	1/16W
R518	1-218-859-11	RES-CHIP	3.3K	2%	1/16W
R519	1-218-863-11	RES-CHIP	4.7K	2%	1/16W
R551	1-218-331-11	RES-CHIP	51K	5%	1/16W
R552	1-216-819-11	METAL CHIP	680	5%	1/16W
R553	1-216-857-11	METAL CHIP	1M	5%	1/16W
R554	1-216-807-11	METAL CHIP	68	5%	1/16W
R555	1-216-819-11	METAL CHIP	680	5%	1/16W
R559	1-216-806-11	RES-CHIP	56	5%	1/16W
R560	1-216-806-11	RES-CHIP	56	5%	1/16W
R561	1-216-806-11	RES-CHIP	56	5%	1/16W
R562	1-216-806-11	RES-CHIP	56	5%	1/16W
R563	1-216-816-11	METAL CHIP	390	5%	1/16W (L350)
R563	1-216-817-11	METAL CHIP	470	5%	1/16W (L450X/L470X)
R564	1-216-816-11	METAL CHIP	390	5%	1/16W (L350)
R564	1-216-817-11	METAL CHIP	470	5%	1/16W (L450X/L470X)
R565	1-216-816-11	METAL CHIP	390	5%	1/16W (L350)
R565	1-216-817-11	METAL CHIP	470	5%	1/16W (L450X/L470X)
R566	1-216-816-11	METAL CHIP	390	5%	1/16W (L350)
R566	1-216-817-11	METAL CHIP	470	5%	1/16W (L450X/L470X)
R567	1-216-816-11	METAL CHIP	390	5%	1/16W (L350)
R567	1-216-817-11	METAL CHIP	470	5%	1/16W (L450X/L470X)
R568	1-216-816-11	METAL CHIP	390	5%	1/16W (L350)
R568	1-216-817-11	METAL CHIP	470	5%	1/16W (L450X/L470X)
R569	1-216-816-11	METAL CHIP	390	5%	1/16W (L350)
R569	1-216-817-11	METAL CHIP	470	5%	1/16W (L450X/L470X)
R570	1-216-816-11	METAL CHIP	390	5%	1/16W (L350)
R570	1-216-817-11	METAL CHIP	470	5%	1/16W (L450X/L470X)
R571	1-216-817-11	METAL CHIP	470	5%	1/16W (L450X/L470X)
R571	1-218-269-11	RES-CHIP	360	5%	1/16W (L350)
R572	1-216-817-11	METAL CHIP	470	5%	1/16W (L450X/L470X)
R572	1-218-269-11	RES-CHIP	360	5%	1/16W (L350)
R573	1-216-816-11	METAL CHIP	390	5%	1/16W (L350)
R573	1-216-817-11	METAL CHIP	470	5%	1/16W (L450X/L470X)
R574	1-216-816-11	METAL CHIP	390	5%	1/16W (L350)
R574	1-216-817-11	METAL CHIP	470	5%	1/16W (L450X/L470X)
R575	1-216-816-11	METAL CHIP	390	5%	1/16W (L350)
R575	1-216-817-11	METAL CHIP	470	5%	1/16W (L450X/L470X)
R576	1-216-816-11	METAL CHIP	390	5%	1/16W (L350)
R576	1-216-817-11	METAL CHIP	470	5%	1/16W (L450X/L470X)

< SWITCH >

S501	1-572-704-31	SWITCH, KEYBOARD (⏏)
S502	1-572-704-31	SWITCH, KEYBOARD (SRC (SOURCE))
S503	1-572-704-31	SWITCH, KEYBOARD (MODE)
S504	1-572-704-31	SWITCH, KEYBOARD (SEL)
S505	1-572-704-31	SWITCH, KEYBOARD (+ (Volume))
S506	1-572-704-31	SWITCH, KEYBOARD (– (Volume))
S507	1-572-704-31	SWITCH, KEYBOARD (ATT)
S508	1-572-704-31	SWITCH, KEYBOARD (SENS)
S509	1-572-704-31	SWITCH, KEYBOARD (BTM)
S510	1-572-704-31	SWITCH, KEYBOARD (DSPL)
S511	1-572-704-31	SWITCH, KEYBOARD (OFF)
S512	1-572-704-31	SWITCH, KEYBOARD (D (D-BASS))
S513	1-572-704-31	SWITCH, KEYBOARD (MBP)
S514	1-572-704-31	SWITCH, KEYBOARD (+ ▶▶I ▶▶ (SEEK/AMS))
S515	1-572-704-31	SWITCH, KEYBOARD (◀◀ I◀◀ – (SEEK/AMS))
S516	1-572-704-31	SWITCH, KEYBOARD (6)
S517	1-572-704-31	SWITCH, KEYBOARD (5)
S518	1-572-704-31	SWITCH, KEYBOARD (4/SHUF)
S519	1-572-704-31	SWITCH, KEYBOARD (3/REP)
S520	1-572-704-31	SWITCH, KEYBOARD (2)
S521	1-572-704-31	SWITCH, KEYBOARD (1)

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Ref. No.	Part No.	Description			Remark
*	1-676-709-11	IN SELF SW BOARD			
		**********			
		< SWITCH >			
SW2	1-529-566-41	SWITCH, PUSH (1 KEY) (SELF)			
SW3	1-529-566-41	SWITCH, PUSH (1 KEY) (DISC IN)			
**********					
*	A-3283-105-A	MAIN BOARD, COMPLETE (L350)			
*	A-3283-107-A	MAIN BOARD, COMPLETE (L450X/L470X)			
		**********			
*	3-019-565-01	BRACKET (IC)			
*	3-041-261-01	BRACKET (TR)			
*	3-224-613-01	HEAT SINK			
	7-685-793-09	SCREW +PTT 2.6X8 (S)			
	7-685-795-09	SCREW +PTT 2.6X12 (S)			
		< CAPACITOR >			
C101	1-164-346-11	CERAMIC CHIP	1uF		16V
C102	1-164-346-11	CERAMIC CHIP	1uF		16V
C103	1-124-233-11	ELECT	10uF	20%	16V
C104	1-124-233-11	ELECT	10uF	20%	16V
C105	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C108	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C110	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C111	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C113	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C114	1-124-257-00	ELECT	2.2uF	20%	50V
C115	1-162-965-11	CERAMIC CHIP	0.0015uF	10%	50V
C116	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C117	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C118	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C119	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C201	1-164-346-11	CERAMIC CHIP	1uF		16V
C202	1-164-346-11	CERAMIC CHIP	1uF		16V
C203	1-124-233-11	ELECT	10uF	20%	16V
C204	1-124-233-11	ELECT	10uF	20%	16V
C205	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C208	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C210	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C211	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C213	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C214	1-124-257-00	ELECT	2.2uF	20%	50V
C215	1-162-965-11	CERAMIC CHIP	0.0015uF	10%	50V
C216	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C217	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C218	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C219	1-124-228-00	ELECT	22uF	10%	20V
C401	1-124-259-11	ELECT	4.7uF	20%	16V
C407	1-124-233-11	ELECT	10uF	20%	16V
C426	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C432	1-124-589-11	ELECT	47uF	20%	16V
C435	1-124-589-11	ELECT	47uF	20%	16V

Ref. No.	Part No.	Description			Remark
C602	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C603	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C604	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C605	1-104-665-11	ELECT	100uF	20%	10V
C606	1-104-665-11	ELECT	100uF	20%	10V
C608	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C609	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C610	1-124-233-11	ELECT	10uF	20%	16V
C611	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C612	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C613	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C614	1-164-174-11	CERAMIC CHIP	0.0082uF	10%	25V
C615	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C617	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C618	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C619	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C620	1-124-233-11	ELECT	10uF	20%	16V
C621	1-124-233-11	ELECT	10uF	20%	16V
C622	1-162-911-11	CERAMIC CHIP	6PF	0.5PF	50V
C623	1-162-912-11	CERAMIC CHIP	7PF	0.5PF	50V
C624	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C625	1-162-963-11	CERAMIC CHIP	680PF	10%	50V
C626	1-164-315-11	CERAMIC CHIP	470PF	5%	50V
C627	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C631	1-126-157-11	ELECT	10uF	20%	16V
C633	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C634	1-124-234-00	ELECT	22uF	20%	16V
C650	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V (L350)
C650	1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V (L450X/L470X)
C651	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V (L350)
C651	1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V (L450X/L470X)
C652	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C706	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C707	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C801	1-124-233-11	ELECT	10uF	20%	16V
C802	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C803	1-164-185-11	CERAMIC CHIP	13PF	5%	50V
C804	1-164-185-11	CERAMIC CHIP	13PF	5%	50V
C809	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C810	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C841	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C842	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C843	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C844	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C845	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C846	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C847	1-164-346-11	CERAMIC CHIP	1uF		16V
C848	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C901	1-135-473-21	ELECT	3300uF	20%	16V
C902	1-164-156-11	CERAMIC CHIP	0.1uF		25V

MAIN

Ref. No.	Part No.	Description			Remark
C904	1-104-942-11	ELECT	1uF	20%	50V
C905	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C907	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C909	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C910	1-124-259-11	ELECT	4.7uF	20%	16V
C913	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C914	1-104-665-11	ELECT	100uF	20%	10V
C915	1-110-654-11	DOUBLE LAYERS	0.047F		5.5V
C916	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C919	1-124-229-00	ELECT	33uF	20%	10V
C920	1-124-259-11	ELECT	4.7uF	20%	16V
C997	1-164-156-11	CERAMIC CHIP	0.1uF		25V
		< JACK >			
CNJ601	1-793-598-11	JACK (ANT)			
		< CONNECTOR >			
CNP501	1-774-701-11	PIN, CONNECTOR 16P			
CNP701	1-764-617-12	PIN, CONNECTOR (PC BOARD) 30P			
CNP801	1-794-311-21	PLUG, CONNECTOR 12P			
		< SURGE ABSORBER >			
CP601	1-803-335-21	ABSORBER, CHIP SURGE			
		< DIODE >			
D401	8-719-991-33	DIODE	1SS133T-77		
D402	8-719-991-33	DIODE	1SS133T-77		
D444	8-719-991-33	DIODE	1SS133T-77		
D601	8-719-991-33	DIODE	1SS133T-77		
D604	8-719-109-89	DIODE	RD5.6ESB2		
D901	8-719-049-38	DIODE	1N5404TU		
D903	8-719-109-97	DIODE	RD6.8ESB2		
D904	8-719-200-82	DIODE	11ES2		
D906	8-719-921-63	DIODE	MTZJ-7.5B		
D907	8-719-110-49	DIODE	RD18ESB2		
D908	8-719-921-63	DIODE	MTZJ-7.5B		
D909	8-719-109-97	DIODE	RD6.8ESB2		
D910	8-719-109-89	DIODE	RD5.6ESB2		
D913	8-719-110-14	DIODE	RD9.1ESB3		
D914	8-719-991-33	DIODE	1SS133T-77		
D915	8-719-079-42	DIODE	1ZB22(TPA3)		
D916	8-719-079-42	DIODE	1ZB22(TPA3)		
D917	8-719-079-42	DIODE	1ZB22(TPA3)		
D918	8-719-079-42	DIODE	1ZB22(TPA3)		
D919	8-719-079-42	DIODE	1ZB22(TPA3)		
D920	8-719-079-97	DIODE	CRZ22(TE85L.SONY)		
D921	8-719-079-97	DIODE	CRZ22(TE85L.SONY)		
D922	8-719-079-42	DIODE	1ZB22(TPA3)		
D923	8-719-110-14	DIODE	RD9.1ESB3		
D930	8-719-109-89	DIODE	RD5.6ESB2		
D999	8-719-991-33	DIODE	1SS133T-77		

Ref. No.	Part No.	Description		Remark
		< IC >		
IC101	8-759-827-14	IC	TA8268AH	
IC401	8-759-827-11	IC	LC75421M-TLM	
IC601	8-759-586-59	IC	TB2118F(EL)	
IC801	8-759-837-06	IC	uPD780024AGK-B26-9ET	
IC902	8-759-837-07	IC	S7139SF	
		< JUMPER RESISTOR >		
JR1	1-216-864-11	SHORT	0	
JR101	1-216-864-11	SHORT	0	
JR601	1-216-864-11	SHORT	0	
JR602	1-216-864-11	SHORT	0	
JR901	1-216-864-11	SHORT	0	
JR902	1-216-864-11	SHORT	0	
JR929	1-216-864-11	SHORT	0	
		< COIL >		
L601	1-410-515-11	INDUCTOR	33uH	
L603	1-412-006-31	INDUCTOR	10uH	
L604	1-410-750-41	INDUCTOR	0.47uH	
L666	1-410-502-11	INDUCTOR	2.7uH	
L667	1-424-759-21	COIL (AM ANT)		
L702	1-410-513-11	INDUCTOR	22uH	
L703	1-410-513-11	INDUCTOR	22uH	
L901	1-419-476-31	COIL, CHOKE	250uH	
		< JACK >		
PJ401	1-774-698-11	JACK, PIN 2P (AUDIO OUT)		
		< TRANSISTOR >		
Q101	8-729-920-21	TRANSISTOR	DTC314TK-T-146	
Q102	8-729-920-21	TRANSISTOR	DTC314TK-T-146	
Q201	8-729-920-21	TRANSISTOR	DTC314TK-T-146	
Q202	8-729-920-21	TRANSISTOR	DTC314TK-T-146	
Q401	8-729-055-92	TRANSISTOR	SRA2203S	
Q402	8-729-055-96	TRANSISTOR	SRC1203S	
Q601	8-729-055-96	TRANSISTOR	SRC1203S	
Q602	8-729-049-40	TRANSISTOR	STC2412G	
Q603	8-729-030-51	TRANSISTOR	2SA1515S-R-TP	
Q604	8-729-055-96	TRANSISTOR	SRC1203S	
Q605	8-729-030-51	TRANSISTOR	2SA1515S-R-TP	
Q606	8-729-055-96	TRANSISTOR	SRC1203S	
Q901	8-729-049-40	TRANSISTOR	STC2412G	
Q902	8-729-049-40	TRANSISTOR	STC2412G	
Q903	8-729-055-96	TRANSISTOR	SRC1203S	
Q904	8-729-055-96	TRANSISTOR	SRC1203S	
Q905	8-729-055-96	TRANSISTOR	SRC1203S	
Q906	8-729-055-92	TRANSISTOR	SRA2203S	
Q907	8-729-021-82	TRANSISTOR	2SD2396K	
Q909	8-729-055-96	TRANSISTOR	SRC1203S	
Q910	8-729-052-35	TRANSISTOR	STD1664	
Q911	8-729-055-96	TRANSISTOR	SRC1203S	

Ref. No.	Part No.	Description			Remark
Q912	8-729-055-92	TRANSISTOR	SRA2203S		
Q913	8-729-019-00	TRANSISTOR	2SD2394-G		
Q914	8-729-055-96	TRANSISTOR	SRC1203S		
Q915	8-729-049-43	TRANSISTOR	STB1132Y		
Q916	8-729-055-92	TRANSISTOR	SRA2203S		
Q917	8-729-820-46	TRANSISTOR	2SB1202FAS		
Q918	8-729-055-92	TRANSISTOR	SRA2203S		
Q919	8-729-052-35	TRANSISTOR	STD1664		
Q920	8-729-052-35	TRANSISTOR	STD1664		
Q921	8-729-055-96	TRANSISTOR	SRC1203S		
Q929	8-729-055-96	TRANSISTOR	SRC1203S		
		< RESISTOR >			
R105	1-249-431-11	CARBON	15K	5%	1/4W
R106	1-249-431-11	CARBON	15K	5%	1/4W
R107	1-216-841-11	METAL CHIP	47K	5%	1/16W
R108	1-216-841-11	METAL CHIP	47K	5%	1/16W
R109	1-216-809-11	METAL CHIP	100	5%	1/16W
R110	1-216-809-11	METAL CHIP	100	5%	1/16W
R113	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R115	1-216-834-11	METAL CHIP	12K	5%	1/16W
R205	1-249-431-11	CARBON	15K	5%	1/4W
R206	1-249-431-11	CARBON	15K	5%	1/4W
R207	1-216-841-11	METAL CHIP	47K	5%	1/16W
R208	1-216-841-11	METAL CHIP	47K	5%	1/16W
R209	1-216-809-11	METAL CHIP	100	5%	1/16W
R210	1-216-809-11	METAL CHIP	100	5%	1/16W
R213	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R215	1-216-834-11	METAL CHIP	12K	5%	1/16W
R401	1-249-429-11	CARBON	10K	5%	1/4W
R404	1-249-417-11	CARBON	1K	5%	1/4W
R407	1-216-841-11	METAL CHIP	47K	5%	1/16W
R408	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R410	1-216-805-11	METAL CHIP	47	5%	1/16W
R444	1-216-864-11	SHORT	0		
R601	1-249-417-11	CARBON	1K	5%	1/4W
R602	1-216-821-11	METAL CHIP	1K	5%	1/16W
R603	1-249-407-11	CARBON	150	5%	1/4W
R604	1-216-821-11	METAL CHIP	1K	5%	1/16W
R605	1-216-841-11	METAL CHIP	47K	5%	1/16W
R606	1-216-841-11	METAL CHIP	47K	5%	1/16W
R607	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R608	1-216-833-11	METAL CHIP	10K	5%	1/16W
R609	1-216-809-11	METAL CHIP	100	5%	1/16W
R610	1-216-809-11	METAL CHIP	100	5%	1/16W
R611	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R612	1-216-833-11	METAL CHIP	10K	5%	1/16W
R613	1-216-833-11	METAL CHIP	10K	5%	1/16W
R614	1-216-821-11	METAL CHIP	1K	5%	1/16W
R615	1-216-821-11	METAL CHIP	1K	5%	1/16W
R616	1-216-845-11	METAL CHIP	100K	5%	1/16W
R617	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R618	1-216-845-11	METAL CHIP	100K	5%	1/16W

Ref. No.	Part No.	Description			Remark
R619	1-216-817-11	METAL CHIP	470	5%	1/16W
R620	1-216-817-11	METAL CHIP	470	5%	1/16W (L350)
R620	1-216-821-11	METAL CHIP	1K	5%	1/16W (L450X/L470X)
R621	1-216-835-11	METAL CHIP	15K	5%	1/16W (L450X/L470X)
R621	1-216-837-11	METAL CHIP	22K	5%	1/16W (L350)
R622	1-216-817-11	METAL CHIP	470	5%	1/16W (L350)
R622	1-216-821-11	METAL CHIP	1K	5%	1/16W (L450X/L470X)
R623	1-216-835-11	METAL CHIP	15K	5%	1/16W (L450X/L470X)
R623	1-216-837-11	METAL CHIP	22K	5%	1/16W (L350)
R628	1-216-829-11	METAL CHIP	4.7K	5%	1/16W (L350)
R628	1-216-830-11	METAL CHIP	5.6K	5%	1/16W (L450X/L470X)
R704	1-216-821-11	METAL CHIP	1K	5%	1/16W
R705	1-216-821-11	METAL CHIP	1K	5%	1/16W
R706	1-216-864-11	SHORT	0		
R707	1-247-887-00	CARBON	220K	5%	1/4W
R708	1-216-821-11	METAL CHIP	1K	5%	1/16W
R709	1-216-821-11	METAL CHIP	1K	5%	1/16W
R710	1-216-821-11	METAL CHIP	1K	5%	1/16W
R711	1-216-821-11	METAL CHIP	1K	5%	1/16W
R712	1-216-821-11	METAL CHIP	1K	5%	1/16W
R714	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R716	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R801	1-216-849-11	METAL CHIP	220K	5%	1/16W
R802	1-216-849-11	METAL CHIP	220K	5%	1/16W
R806	1-249-417-11	CARBON	1K	5%	1/4W
R807	1-216-821-11	METAL CHIP	1K	5%	1/16W
R808	1-216-821-11	METAL CHIP	1K	5%	1/16W
R809	1-216-841-11	METAL CHIP	47K	5%	1/16W
R810	1-247-807-31	CARBON	100	5%	1/4W
R811	1-247-807-31	CARBON	100	5%	1/4W
R812	1-247-807-31	CARBON	100	5%	1/4W
R813	1-216-837-11	METAL CHIP	22K	5%	1/16W
R814	1-216-809-11	METAL CHIP	100	5%	1/16W
R815	1-216-809-11	METAL CHIP	100	5%	1/16W
R817	1-216-841-11	METAL CHIP	47K	5%	1/16W (L450X/L470X)
R818	1-216-845-11	METAL CHIP	100K	5%	1/16W (L450X/L470X)
R819	1-216-864-11	SHORT	0		(L350)
R821	1-216-864-11	SHORT	0		
R823	1-216-849-11	METAL CHIP	220K	5%	1/16W
R824	1-216-849-11	METAL CHIP	220K	5%	1/16W
R840	1-216-821-11	METAL CHIP	1K	5%	1/16W
R841	1-216-821-11	METAL CHIP	1K	5%	1/16W
R842	1-216-821-11	METAL CHIP	1K	5%	1/16W

MAIN **SERVO**

Ref. No.	Part No.	Description			Remark
R901	1-216-214-00	RES-CHIP	4.7K	5%	1/8W
R902	1-216-821-11	METAL CHIP	1K	5%	1/16W
R903	1-249-429-11	CARBON	10K	5%	1/4W
R904	1-216-841-11	METAL CHIP	47K	5%	1/16W
R905	1-216-833-11	METAL CHIP	10K	5%	1/16W
R906	1-249-417-11	CARBON	1K	5%	1/4W
R907	1-216-841-11	METAL CHIP	47K	5%	1/16W
R908	1-216-841-11	METAL CHIP	47K	5%	1/16W
R909	1-216-828-11	RES-CHIP	3.9K	5%	1/16W
R910	1-216-836-11	METAL CHIP	18K	5%	1/16W
R911	1-216-821-11	METAL CHIP	1K	5%	1/16W
R912	1-249-413-11	CARBON	470	5%	1/4W
R913	1-249-417-11	CARBON	1K	5%	1/4W
R917	1-249-409-11	CARBON	220	5%	1/4W
R918	1-216-845-11	METAL CHIP	100K	5%	1/16W
R919	1-249-421-11	CARBON	2.2K	5%	1/4W
R920	1-216-849-11	METAL CHIP	220K	5%	1/16W
R921	1-216-841-11	METAL CHIP	47K	5%	1/16W
R922	1-208-806-11	RES-CHIP	10K	0.5%	1/10W
R923	1-208-806-11	RES-CHIP	10K	0.5%	1/10W
R924	1-249-404-00	CARBON	82	5%	1/4W
R925	1-249-404-00	CARBON	82	5%	1/4W
R926	1-249-404-00	CARBON	82	5%	1/4W
R927	1-249-404-00	CARBON	82	5%	1/4W
R928	1-249-404-00	CARBON	82	5%	1/4W
R929	1-249-404-00	CARBON	82	5%	1/4W
R930	1-249-395-11	CARBON	15	5%	1/4W
R931	1-249-427-11	CARBON	6.8K	5%	1/4W
R932	1-249-421-11	CARBON	2.2K	5%	1/4W
R933	1-216-821-11	METAL CHIP	1K	5%	1/16W
R934	1-249-409-11	CARBON	220	5%	1/4W
		< SWITCH >			
S901	1-762-638-21	SWITCH, TACTILE (RESET)			
SW801	1-571-478-11	SWITCH, SLIDE (FREQUENCY SELECT) (L450X/L470X)			
		< THERMISTOR >			
TH901	1-809-148-11	THERMISTOR PTH8L07AR2R0M1B510			
		< TUNER >			
TU601	1-693-511-11	TUNER UNIT			
		< VIBRATOR >			
X601	1-781-246-21	VIBRATOR, CRYSTAL (10.25MHz)			
X801	1-795-259-21	VIBRATOR, CERAMIC (8.38MHz)			
X802	1-567-098-41	VIBRATOR, CRYSTAL (32.768kHz)			

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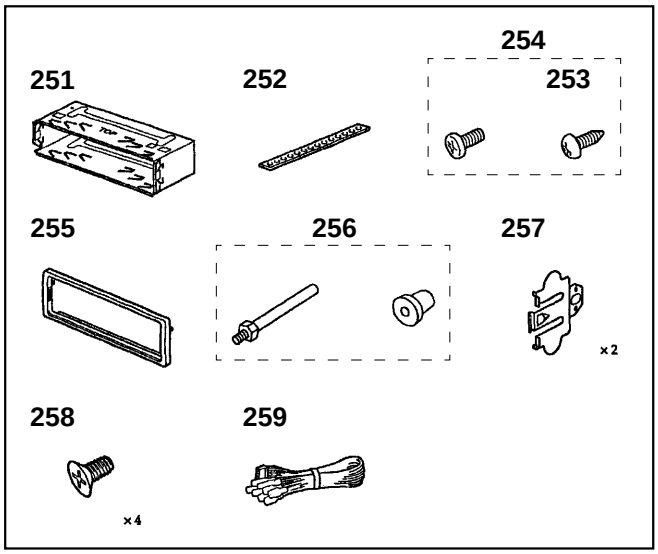
Ref. No.	Part No.	Description			Remark
*	A-3283-048-A	SERVO BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C1	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C3	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C4	1-104-609-11	ELECT CHIP	100uF	20%	4V
C5	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C6	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C7	1-126-394-11	ELECT CHIP	10uF	20%	16V
C8	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C9	1-162-924-11	CERAMIC CHIP	56PF	5%	50V
C10	1-162-924-11	CERAMIC CHIP	56PF	5%	50V
C11	1-162-909-11	CERAMIC CHIP	4PF	0.25PF	50V
C13	1-162-916-11	CERAMIC CHIP	12PF	5%	50V
C14	1-125-837-00	CERAMIC CHIP	1uF	10%	6.3V
C15	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C16	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C17	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C18	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C19	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C20	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C21	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C22	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C23	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C24	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C25	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C26	1-126-391-11	ELECT CHIP	47uF	20%	6.3V
C27	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C28	1-126-391-11	ELECT CHIP	47uF	20%	6.3V
C29	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C30	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C31	1-126-391-11	ELECT CHIP	47uF	20%	6.3V
C34	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C35	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C36	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C37	1-126-393-11	ELECT CHIP	33uF	20%	10V
C38	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C39	1-126-391-11	ELECT CHIP	47uF	20%	6.3V
C40	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C41	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C43	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V
C44	1-125-837-00	CERAMIC CHIP	1uF	10%	6.3V
		< CONNECTOR >			
CN1	1-764-616-12	HOUSING, CONNECTOR (PC BOARD) 30P			
CN2	1-794-153-21	CONNECTOR, FPC (ZIF) 16P			
CN3	1-770-347-21	CONNECTOR, FPC 6P			
		< JUMPER RESISTOR >			
FB1	1-216-864-11	SHORT	0		
FB2	1-216-864-11	SHORT	0		
FB3	1-216-864-11	SHORT	0		

Ref. No.	Part No.	Description			Remark
FB4	1-216-864-11	SHORT	0		
FB6	1-216-864-11	SHORT	0		
FB7	1-216-864-11	SHORT	0		
		< IC >			
IC1	8-759-699-98	IC uPD63711GC-8EU			
IC2	8-759-658-87	IC BA5810FP-E2			
		< TRANSISTOR >			
Q1	8-729-904-87	TRANSISTOR 2SB1197K-T-146-R			
		< RESISTOR >			
R3	1-216-797-11	METAL CHIP	10	5%	1/16W
R5	1-218-344-11	RES-CHIP	7.5K	5%	1/16W
R6	1-216-837-11	METAL CHIP	22K	5%	1/16W
R7	1-216-839-11	METAL CHIP	33K	5%	1/16W
R8	1-216-833-11	METAL CHIP	10K	5%	1/16W
R9	1-216-840-11	METAL CHIP	39K	5%	1/16W
R10	1-216-835-11	METAL CHIP	15K	5%	1/16W
R12	1-216-837-11	METAL CHIP	22K	5%	1/16W
R14	1-216-841-11	METAL CHIP	47K	5%	1/16W
R15	1-216-841-11	METAL CHIP	47K	5%	1/16W
R17	1-216-809-11	METAL CHIP	100	5%	1/16W
R18	1-216-809-11	METAL CHIP	100	5%	1/16W
R19	1-216-809-11	METAL CHIP	100	5%	1/16W
R20	1-216-809-11	METAL CHIP	100	5%	1/16W
R21	1-216-821-11	METAL CHIP	1K	5%	1/16W
R22	1-216-821-11	METAL CHIP	1K	5%	1/16W
R24	1-216-864-11	SHORT	0		
R25	1-216-864-11	SHORT	0		
R26	1-216-797-11	METAL CHIP	10	5%	1/16W
R29	1-216-833-11	METAL CHIP	10K	5%	1/16W
R30	1-216-833-11	METAL CHIP	10K	5%	1/16W
		< SWITCH >			
SW1	1-762-944-12	SWITCH, DETECTION (SMALL TYPE) (DOWN)			
		< VIBRATOR >			
X1	1-781-759-21	VIBRATOR, CERAMIC (CHIP TYPE) (16.9344MHz)			
**********					
*	1-676-708-11	SL SW BOARD			
		**********			
		< CONNECTOR >			
CN13	1-770-347-21	CONNECTOR, FPC 6P			
		< SWITCH >			
SW4	1-529-565-41	SWITCH, PUSH (1 KEY) (LIMIT)			
**********					

Ref. No.	Part No.	Description	Remark
*	1-680-663-11	SPEAKER BOARD	
		**********	
**********			
		MISCELLANEOUS	
		**********	
4	1-776-206-21	CORD (WITH CONNECTOR) (POWER) (US,CND,E)	
4	1-776-527-11	CORD (WITH CONNECTOR) (ISO) (POWER) (AEP)	
201	X-3378-480-1	CHASSIS (OP) ASSY (including M901)	
206	1-676-707-11	PICK-UP FLEXIBLE BOARD	
207	1-677-182-11	MOTOR FLEXIBLE BOARD	
⚠210	8-820-103-03	PICK-UP, OPTICAL KSS-720A/K1RP	
F901	1-532-877-11	FUSE (BLADE TYPE) (AUTO FUSE) 10A	
M902	A-3301-985-A	MOTOR ASSY, SLED (SLED)	
M903	A-3315-039-A	MOTOR SUB ASSY, LO (LOADING)	
**********			
		ACCESSORIES & PACKING MATERIALS	
		**********	
	1-476-526-31	REMOTE COMMANDER (RM-X115) (L350/L470X)	
	3-230-047-01	LID, BATTERY CASE (for RM-X115) (L350/L470X)	
	3-227-642-11	MANUAL, INSTRUCTION, INSTALL (ENGLISH, FRENCH) (L350)	
	3-227-643-11	MANUAL, INSTRUCTION (ENGLISH) (L350)	
	3-227-643-21	MANUAL, INSTRUCTION (FRENCH) (L350:CND)	
	3-227-644-11	MANUAL, INSTRUCTION, INSTALL (ENGLISH, SPANISH,TRADITIONAL CHINESE) (L450X:E/L470X)	
	3-227-644-21	MANUAL, INSTRUCTION, INSTALL (ENGLISH,RUSSIAN) (L450X:AEP)	
	3-227-649-11	MANUAL, INSTRUCTION (ENGLISH,SPANISH, TRADITIONALCHINESE) (L450X:E/L470X)	
	3-227-649-21	MANUAL, INSTRUCTION (ENGLISH,RUSSIAN) (L450X:AEP)	
	X-3380-054-1	CASE ASSY (for FRONT PANEL)	
**********			
		**********	
		HARDWARE LIST	
		**********	
#1	7-685-792-09	SCREW +PTT 2.6X6 (S)	
#2	7-621-772-10	SCREW +B 2X4	
#3	7-685-795-09	SCREW +PTT 2.6X12 (S)	
#4	7-685-793-09	SCREW +PTT 2.6X8 (S)	
#5	7-685-106-19	SCREW +P 2X10 TYPE2 NON-SLIT	
#6	7-627-850-28	SCREW, PRECISION +P 1.4X3	
#7	7-628-253-00	SCREW, SPECIAL	
#8	7-627-553-37	SCREW, PRECISION +P 2X3 TYPE 3	
#9	7-627-553-17	SCREW, PRECISION +P 2X2 TYPE 3	
**********			

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
		PARTS FOR INSTALLATION AND CONNECTIONS	
		**********	
251	3-014-370-21	FRAME, FITTING	
252	3-916-012-01	BRACKET (ND), FITTING ASSIST (L350)	
253	7-682-160-01	SCREW +P 4X6 (L350)	
254	X-3368-725-1	SCREW ASSY, FITTING (L350)	
255	3-224-614-01	COLLAR	
256	X-3366-405-1	SCREW ASSY (EXP), FITTING (L450X/L470X)	
257	3-030-929-04	SPRING, FITTING	
258	3-934-325-01	SCREW (+K 5X8 TP)	
259	1-776-206-21	CORD (WITH CONNECTOR) (POWER) (US,CNDE)	
259	1-776-527-11	CORD (WITH CONNECTOR) (ISO) (POWER) (AEP)	



REVISION HISTORY

Clicking the version allows you to jump to the revised page.
Also, clicking the version at the upper right on the revised page allows you to jump to the next revised page.

Ver.	Date	Description of Revision
1.0	2001. 01	New